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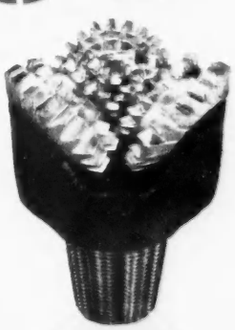
The OIL WEEKLY

FOR THE DRILLING, PRODUCING, PIPE LINE INDUSTRY

APR 29 1946

84% ...OF ALL THE ROCK BITS

used in its development were Hughes



IN the Chitwood Field, the choice is Hughes more than five to one! 84% of all the Rock Bits used in drilling the 100 wells in this field were Hughes!

Situated in Pratt County, Kansas, this field produces from the Simpson formation at a depth of 4400 feet, using approximately 22 bits per well.

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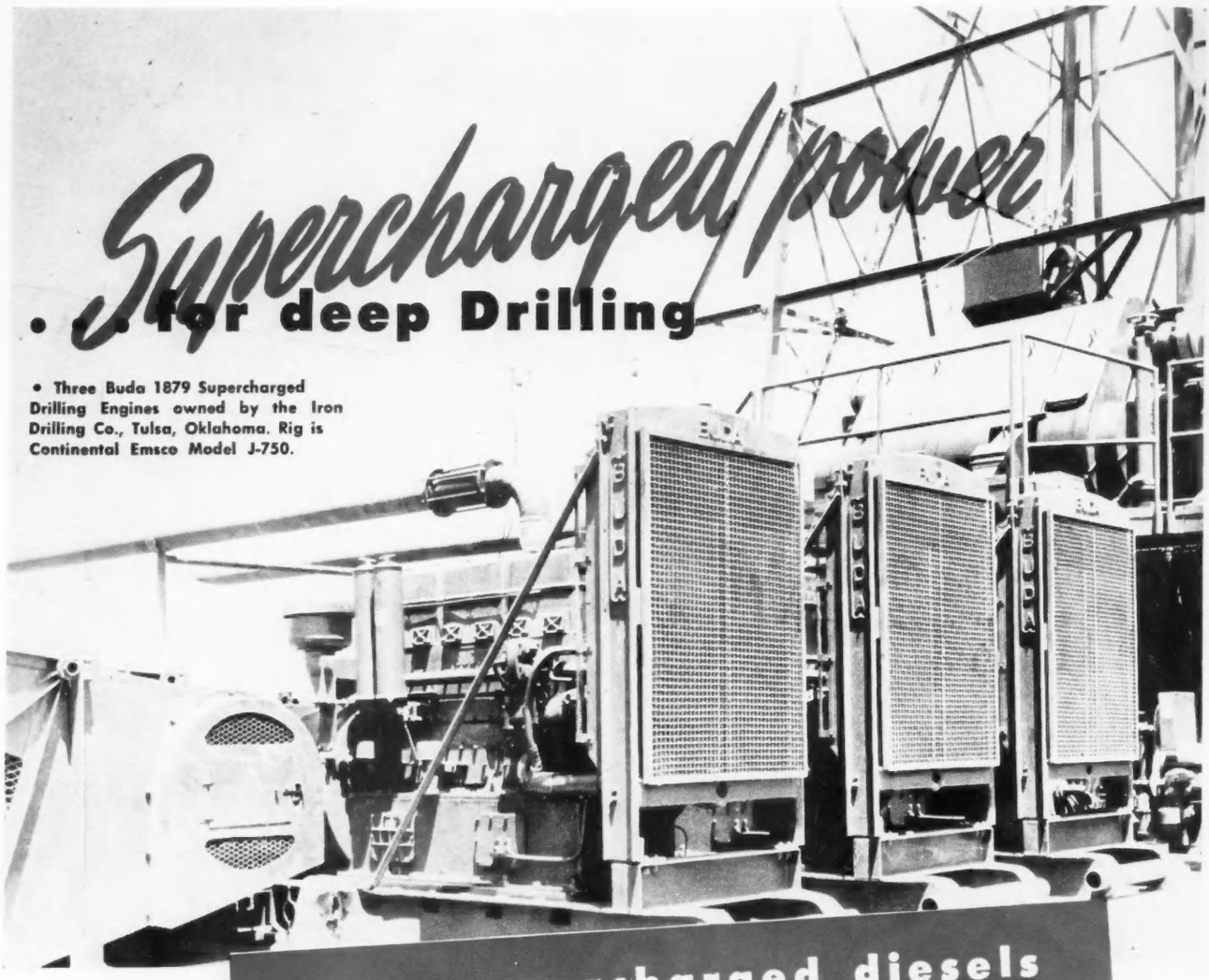

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Looking Ahead

WITH THE EDITOR

SECONDARY recovery is becoming more important as the saturation point of new field discoveries is approached and as existing fields expend their reservoir energy.

WATER FLOODING

Water flooding has played an important role in this field and has developed many engineering problems yet to be solved. The action of the various fluids in permeable media deep within the earth has been the subject of engineers and scientists throughout the world. For it is the behavior of fluids within the producing sands, and a knowledge of such behavior, that operators will be able to withdraw the maximum of valuable oil from the reservoirs at a more economical cost. S. T. Yuster, of Pennsylvania State College's Mineral Industries Station, is the author of a study, "Field Effective Permeabilities and Shot Well Radii" which deals with the theoretical calculation of important factors necessary for the evaluation of the behavior of a water flood property. The article will appear next week.

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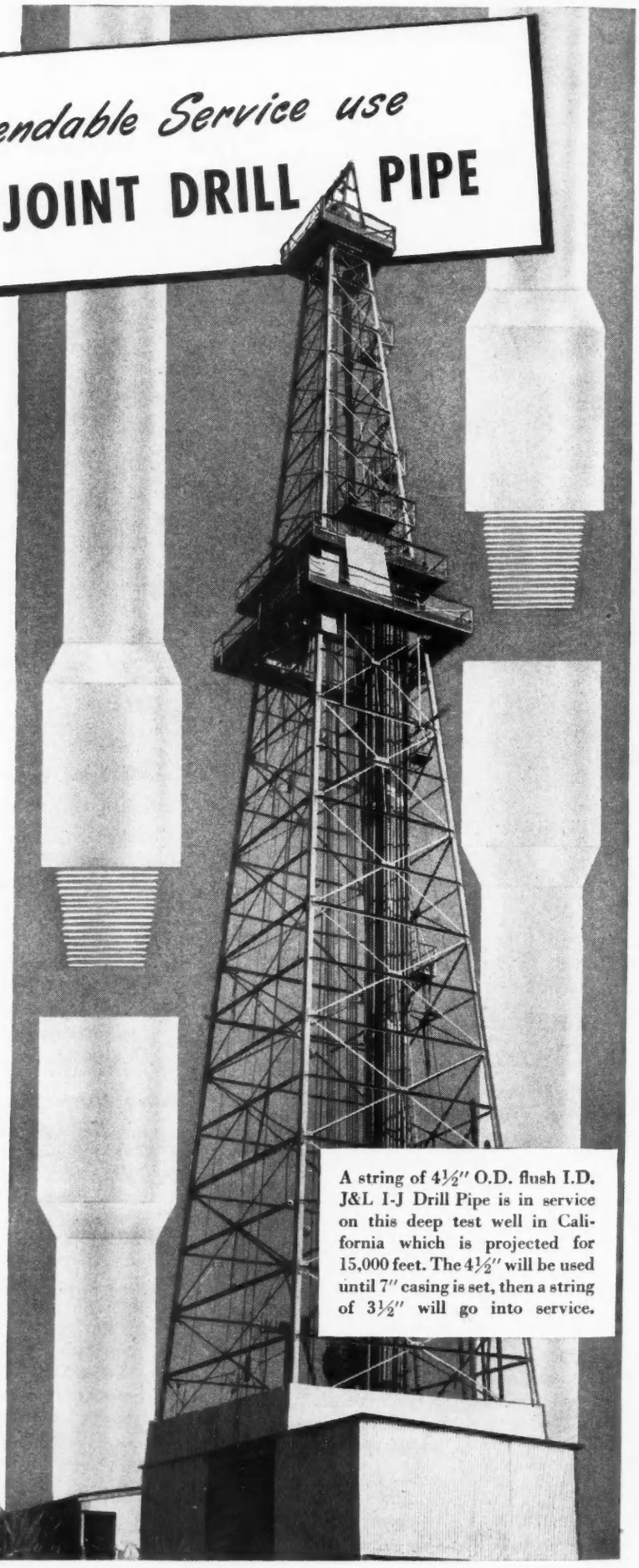


A string of 4½" O.D. flush I.D. J&L I-J Drill Pipe is in service on this deep test well in California which is projected for 15,000 feet. The 4½" will be used until 7" casing is set, then a string of 3½" will go into service.

No Let-Down Likely For Oil Production

RETURN to peace will interrupt world production of petroleum probably less than generally believed. It now is indicated that production in 1946 may be only about 2 percent less than in record-breaking 1945. And in 1947 output possibly will reach a new high.

This prospect, which may be surprising to some oil men, is the net result of balancing indicated increases outside the United States against an expected decrease in 1946 in the U. S.

World production of crude oil averaged 7,625,000 barrels daily in 1945, and it may average about 7,475,000 daily in 1946, a decrease of 2.0 percent. This is based on an estimate of 4,300,000 daily in the United States in 1946, down 8.2 percent from the 4,686,000 daily of 1945, and an estimate of 3,175,000 daily for the rest of the world, up 8.0 percent from the 2,939,000 of 1945.

The indicated increase outside the United States will result mainly from utilization of new refining, transportation and producing capacity completed in 1945 or to be completed in 1946 in the Caribbean and Persian Gulf areas. Furthermore, it is expected that all facilities outside the United States will be utilized to capacity in supplying the requirements for petroleum abroad.

Venezuela and Saudi Arabia in particular will show substantial further increases in production for 1946, while Kuwait will enter the list of producing countries on completion during 1946 of a 30,000-barrel daily capacity pipe line to tanker loading terminal in the Persian Gulf. Mexico probably will be among the countries showing an increase, as her domestic consumption, now largely absorbing the country's production, has been consistently increasing every year.

Venezuelan production averaged 882,000 barrels daily for 1945 as a whole, but output was around 1,000,000 daily in late 1945, and no letdown is indicated. Continuance of the million-barrel rate would put 1946 production about 120,000 barrels above the 1945 average. Planning prior to the end of the war called for minimum production of 1,120,000 barrels daily in Venezuela. Ready market for some increase in Venezuelan production will be afforded by U. S. needs for imported residual fuel oil and heavy crudes. U. S. imports of these oils are expected to be at least 65,000 barrels a day greater in 1946 than in 1945.

Saudi Arabian production averaged 58,000 barrels daily in 1945, but output now exceeds 125,000 barrels daily and is expected to reach 150,000 daily this spring, on completion of new pipe line facilities. The new Ras Tanura refinery in Arabia, placed in operation late in 1945, has capacity of 75,000 barrels daily. The adjacent Bahrein refinery is now running over 60,000 barrels daily, and soon will be increased to 80,000 daily.

Other expansion in the Middle East will increase production materially in 1947 but not much in 1946. Likewise, production in the Far East will be increased as rehabilitation proceeds, but that will be reflected mainly after 1946.

PAW Dissolution

THE final step in the official disolution of PAW is being taken. All activities are to be terminated by April 30.

The formal disolution will be accomplished without any disruption of the industry's functioning, since, except for the preparation of a historical record and minor administrative matters, the activity of PAW actually terminated last November.

There were times when the industry and PAW had differences of opinion, but these were soon ironed out and usually to the satisfaction of the industry. Therefore, it may be said that the war responsibilities of PAW were successfully discharged with credit and honor. All who participated in the undertaking may take pride and satisfaction in their contribution to the service of the nation and the industry.

More Benefit from Petroleum Attaches

IF THE State Department intends to continue with petroleum attaches located in many of our embassies all over the world, the work of these men can be made of great benefit to the oil industry provided their reports are made available promptly.

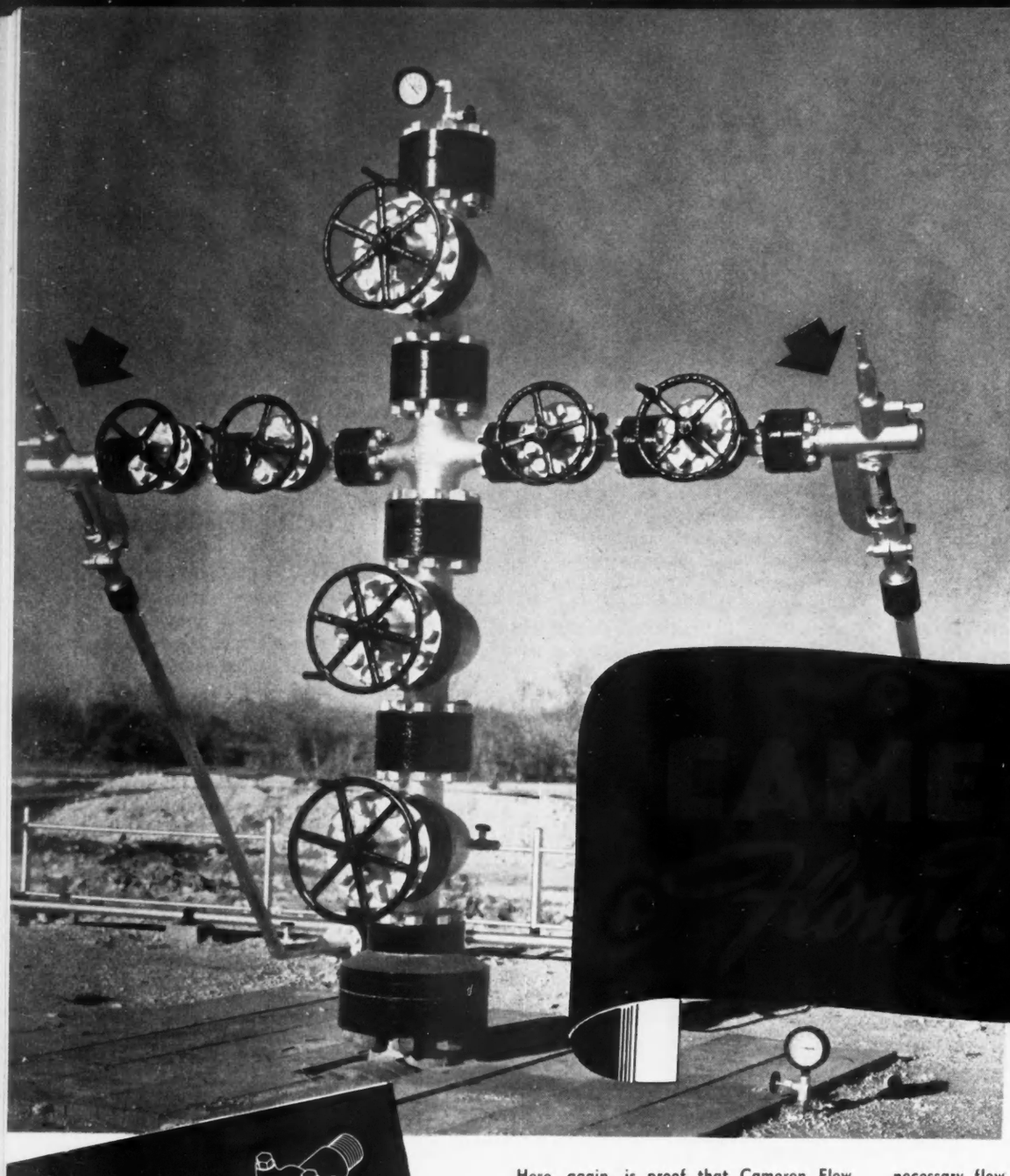
Inaugurated in 1942 as a war measure, some very able men were obtained to fill such posts. During the war, much of their activities may have been of such a confidential nature that publication of the data they procured and sent to Washington would have been inadvisable. With the war over, perhaps some of their reports still partake of a "confidential" nature. On the other hand, the reports must contain much data on drilling, producing and refining, as well as numerous news items, that need not fall in the "secret," "confidential" or "restricted" categories. Such material should be passed on promptly to any interested parties in the oil industry for whatever benefit it might prove to be to American commerce and trade.

The petroleum attaches in American embassies and legations in various countries probably must remain members of the State Department staffs, but their reports should be turned over to the Department of Commerce, Foreign Trade Division, which has facilities for publishing pertinent items useful to business men in this country. We hope that the State Department and Commerce Department will cooperate to serve the American oil industry by making public promptly all data obtained by the petroleum attaches unless of a strictly confidential nature.

☆

At the start of the war in 1939 the longest range of a plane was 1500 miles, but soon after the occupation of Japan a B-29 Superfortress flew 8198 miles nonstop from Guam to Washington.

—STEEL IN THE WAR.



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Flow Wing for installation in horizontal run of Xmas tree.

Here, again, is proof that Cameron Flow Wings perform with complete satisfaction under extreme pressures. Observe in the photograph above of the Cameron 15,000 lb. test pressure Xmas tree installed on Irby No. 1, Goliad County, Texas, that these unique Cameron flow control units are employed on both wings of the tree. Tubing flow pressure of 6885 lbs. on this outstanding well is the highest ever recorded.

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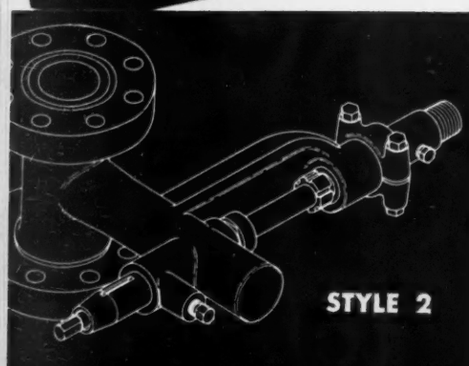
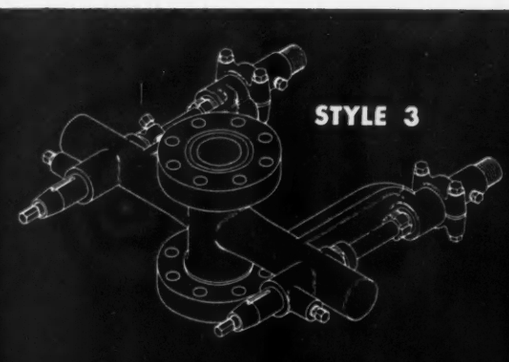


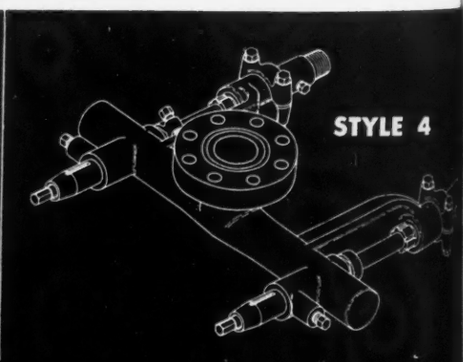
STYLE 2

Tee Type Flow Wing for installation in vertical run of Xmas tree.



STYLE 3

Cross Type Flow Manifold for installation in vertical run of Xmas tree.



STYLE 4

Tee Type Flow Manifold for installation in horizontal run of Xmas tree.

The Week's News

THE Truman administration is faced with another major defeat as the result of the wrecking of its price-control policy by the House, with little chance of salvaging much in the Senate. Extended for only nine months instead of one year, the House-approved bill would require the release from price control of any commodity with a 12-month production equaling the output of the fiscal year 1941, and such products as would remain under control would have to be priced at levels insuring the return of costs plus a reasonable profit to producers, distributors and retailers. Meanwhile, voluntary relinquishment of control over the oil industry was stalled in OPA, where the Fuel Price Division was withholding action on crude and products pending a study of the lubricants situation and other factors and the decontrol division appeared to be attempting to classify oilfield equipment as capital and operational goods, for possible inclusion of the former in another general machinery release early next month. Page 26.

Senate's Inning on OPA—Interest in price control legislation now switches to the Senate, where the banking and currency committee will receive the views of oil representatives April 23 and, like the corresponding House Committee, will be told that OPA policies have hamstrung the industry which, on the supply-demand basis adopted by the administration as the criterion for decontrol, should have been released long since. Page 26.

Peacetime PIWC Urged—PAW officials last week made their final bow before Congress, presenting oral reports to the House Interstate Commerce oil group on their wartime operations. Highlights of the hearings were a presentation of the need for vigorous exploration to recoup wartime losses in reserves and a plea by Deputy Administrator Davies for a strong national oil policy, concentration of government oil activities, and a peacetime counterpart of the PIWC to maintain an effective government-industry relationship. Page 28.

Higher Rail Rates Asked—All of the major railroads of the country joined in a petition to the Interstate Commerce Committee for a general 25 percent increase in freight rates. The flat increase would apply to all petroleum shipments except crude and products in tank cars for which the raise would be limited to six cents per hundred pounds. The railroads plead that higher wages and material costs in the face of declining traffic volume made increased rates necessary. Pennsylvania Railroad reported a $5 million loss for the first quarter of this year, Baltimore and Ohio faces a deficit of $13 million for the first four months. Page 27.

Anglo-American Pact Clearance—The Senate this week will approve the $3.75 billion loan to Britain and send the measure to the House when it meets again for business next week. Once the loan is out of the way, the Senate may be ready to take up the Anglo-American petroleum agreement.

Future Compact Agenda—The Interstate Oil Compact Commission at its July meeting in Michigan will discuss the Anglo-American oil pact and subsidies for strippers. More states are expected as members. Page 31.

NGAA Convention—Officers were reelected by NGAA at its 25th annual convention. Papers on corrosion featured the technical sessions. Page 30.

Atomic Power Station—Monsanto will build a pilot plant to develop production of electrical energy by means of atomic power. Page 27.

Co-ops Want Shelf Leases—Fifteen cooperatives are seeking leases of 100 square miles each on the continental shelf for development of petroleum resources. Story below.

Texas-California Gas Line—FPC is expected to make a decision approving the proposed 1000-mile pipe line linking West Texas gas fields with Southern California within 30 days.

Texas Allowable for May—Continuation of April production figures for the month of May was argued when the Texas Railroad Commission held its statewide hearing Friday. Page 29.

Co-Ops Ask for Petroleum Leases on Continental Shelf of United States

Plans of 15 cooperatives to get in on the ground floor in the development of oil resources underlying the continental shelf, which already have filed applications with the Department of the Interior for exploratory rights on 1500 square miles of underwater territory along the Gulf Coast, were revealed last week in Congress by Representative Charles M. LaFollette of Indiana.

Each of the 15 cooperatives has applied for 100 square miles on the continental shelf off the western Louisiana coast, along the 29th parallel of latitude and roughly between 93 and 94 degrees west longitude. The group, claiming 4,075,000 members in 33 states, includes Farm Bureau Services, Inc., Lansing, Mich.; Cooperative Refinery Association, Kansas City, Missouri; Central Cooperative Wholesale, Superior, Wis.; Pacific Supply Cooperative, Walla Walla, Wash.; Farm Bureau Cooperative Association, Columbus, Ohio; Farmers Union State Exchange, Omaha; Cotton Producers Association, Atlanta; Midland Cooperative Wholesale, Minneapolis; Indiana Farm Bureau Co-op Association, Indianapolis; Southern States Cooperative, Richmond; MFA Oil Company, Columbia, Mo.; Cooperative Oil Association, Inc., Caldwell, Idaho; Farmers Union Central Exchange, St. Paul; Pennsylvania Farm Bureau Cooperative Association, Harrisburg, and The Consumers' Cooperative Refinery Association, Levelland, Texas.

The cooperatives were disclosed to have had the matter under consideration for the past three or four weeks and to have individually obtained authority from their boards of directors to take such action as might be necessary to insure that they got a whack at the nation's new oil reserves.

The move has been given the support of the National Council of Farmer Cooperatives, Farm Bureau Federation, National Grange and the Farmers Union in resolutions and statements demanding that farmer cooperatives and independent oil operators be given "a fair and equitable portion" of the continental shelf, an "equal option with the big petroleum corporations," that large oil companies should not be given "monopolistic control" and that the oil be made

Greater Exploration on Public Lands Being Sought

A definite program for greater exploration on the public lands is being developed by Senator Joseph C. O'Mahoney of Wyoming, who is attempting to enlist the support of Secretary of the Interior Krug. O'Mahoney's data would prove the importance of accelerating the search on the public lands.

The senator pointed out that information presented at the recent hearings of his special petroleum committee showed that the petroleum reserves of the Eastern Hemisphere now are greater than those on this side of the world.

available "to the masses of the people."

"While it is true that eventually this Congress may have to pass legislation fixing the terms and conditions surrounding the development of these resources, nevertheless, I am convinced that the calims which have been filed with the Department of the Interior on April 16 constitute notice to the world and sufficient legal pre-empting of interest of these cooperatives in the right to develop these resources," LaFollette said. "No major oil company has yet filed any such claims."

The applications, he said, show that the cooperatives are willing to bear their share of the cost of exploration, leaving to the government the degree of protection necessary to preserve the Navy's interests in the reserves, and leaving the question of royalties "to be determined by accepted fair practices and standards generally prevailing in the industry.

The cooperatives, LaFollette asserted, are not attempting to pre-empt "all" of the reserves or exclude either the major companies or the independents from a chance to develop them "on a fair competitive basis."

In the applications the statement is made that the applicant "has made research upon the possibilities of the existence of structures within the hereinafter-described area and has already done research as to mechanical methods of drilling for and producing petroleum under waters of the continental shelf."

The applications were filed under the provisions of the leasing act of 1920. The first to be presented, they were submitted to the department following a conference between Under Secretary Oscar C. Chapman and Alfred A. Kiltz of Evansville, Ind., attorney for the cooperatives.

FPC Grants Rehearing on Rate-of-Return Decision

The FPC will reconsider a recent decision setting rate of return for natural gas companies at 6 percent, instead of the traditional 6½ percent, and has stayed its order directing the Penn-York Natural Gas Corporation to reduce its wholesale rates pending a hearing April 29 on the question of the reasonableness of the 6 percent return.

The commission will hold a hearing April 24 on the application of Ohio Fuel Gas Company for authority to construct 15 miles of 12¾-inch and about one mile of four-inch line in Ohio at a cost of $266,030.

Shell Buys Producing Properties in California

Shell Oil Company, Los Angeles, has purchased properties of Republic Petroleum Company, consisting of a U. S. lease and two fee parcels at Midway and three leases at Kern Front in California. The transaction involved approximately 700 acres with 52 wells producing approximately 770 barrels daily. In addition, it was stated that Shell is acquiring a 2.5-acre lease from Republic at Athens-Rosecrans, adjoining the Shell Bank lease.

House Action on OPA Indicates Oil Price Decontrol Within Short Time

Developments of the past week forecast the end of price control over the oil industry within the next few weeks and by early July at the latest.

The major development was the passage by the House of a bill extending the price control law in such form as to assure the lifting, and not merely the suspension, of all restrictions on oil prices.

Within the OPA, study was still being given to the lifting of the oil price ceilings, again urged by Representative Wright Patman of Texas in another letter to Reconversion Director John W. Snyder, and to the issuance of another order suspending ceilings on machinery, in which it was said oilfield equipment of a capital nature had a good chance of being included.

Fuel Price Division officials still were planning a meeting with representatives of the lubricants branch before acting on oil price ceilings, but decontrol division officials said they were anxious to move as quickly as possible to release industries and that another order on machinery would be forthcoming between May 6 and 10. Whether the suspension of equipment ceilings would include all items or merely those the purchase of which was assigned to capital investment rather than to operating cost had not yet been developed.

Senate Committee Hearing

They said the administration will attempt to repair in the Senate the great holes made in the price control law by the House, but are faced with the same resentment against OPA policies in the upper chamber that led the representatives to tear the act to pieces. The Senate Banking and Currency Committee now is holding hearings on the legislation, with OPA officials scheduled to appear April 23, when they will repeat the charges of unfair treatment by OPA and the contentions that oil supply now is sufficient to permit the lifting of ceilings, in conformity with administration promises of decontrol of commodities as fast as they reached a balanced supply and demand position.

As passed by the House, the price control law would be continued only until March 31, next, instead of to June 30, 1947, as sought by the administration, but would largely be robbed of its effectiveness by two provisions, one requiring the lifting of all price controls on any commodity when its production during the preceding twelve months equaled the volume produced in the fiscal year 1941, and the other providing that all price ceilings must be so fixed as to return all costs, plus a "reasonable profit," all along the line, from manufacturer to retailer.

The effect of the first requirement would be to take out from control immediately practically all commodities except those which were produced not at all or to only limited extent during the war, such as automobiles and washing machines, and the second would put an end to the administration's "hold the line" policy.

Since the volume of production of both crude oil itself and every refined product has been at a high level for more than the required 12 months. It would be among the first commodities to be released under the production-parity formula.

At the weekend, OPA officials and administration supporters charged that the House had wrecked the price-control program and indicated that unless the Senate drastically revises the bill, it will be vetoed by President Truman. Members who have been fighting OPA policies, however, declared the House measure provided for continuance of price control but on a "sensible" basis.

Oilfield Equipment

In the OPA decontrol division a list is being made of industrial items in the order in which they are eligible for suspension of ceilings, and officials said the oilfield equipment manufacturers had made out a good case. It was explained, however, that the machinery already released and that to be released is in the nature of capital goods and there is some question whether all oilfield equipment comes in that category.

There are possibilities that an effort will be made to induce the Senate to ease the impact of the House provision calling for release of commodities as quickly as they reach 1941 production levels by authorizing the OPA to suspend rather than lift ceilings entirely. Such a provision, it was said, would give industries the opportunity to adjust their prices to reflect current production costs plus a profit, but would give OPA a club over the head of anyone who sought to take advantage of the current heavy demand to "get all the traffic would bear." Such a club would be most effective in the case of manufacturers of patented specialties who have no competition from identical products, some of whom have admitted that they would like to hike their prices 100 percent or more.

Humble Buys Facility

Mechanical equipment built to process aviation gasoline components, including the Girbotol unit, at the Humble Oil & Refining Company facility at Baytown, Texas, has been sold by War Assets Administration to Humble for $154,208.56.

The equipment, including the control house, cooling tower, water-treating equipment, laboratory equipment and miscellaneous lines, is expected to be used for the manufacture of civilian products.

Petroleum and Products Distributed by UNRRA

More than 600,000 tons of petroleum and products had been acquired by the United Nations Relief and Rehabilitation Administration up to February 28, for distribution abroad, it was reported by UNRRA last week.

Of the total, 252,666 tons were obtained in the Western Hemisphere, approximately 219,950 tons of it by the military, and 180,000 tons were delivered to Italy, 24,700 tons to Yugoslavia, 16,886 tons to Poland, 151,171 tons to Czechoslovakia and 13,000 tons to Greece. Another 359,828 tons were obtained in the Eastern Hemisphere, 280,846 tons going to Greece, 40,463 tons to Yugoslavia, 18,032 tons to Italy and 16,185 tons to Poland.

UNRRA shipments to the liberated areas reached an all-time high in March of 1,526,200 tons, it was reported, but detailed statistics of commodities shipped have not yet been made available.

U. S. Zone Production

Petroleum production in the United States Zone of Germany for the current month has been set by the Military Government at 1661 metric tons (14,118 barrels) of gasoline, 3472 tons (25,000 barrels) of diesel oil and 1200 tons (9480 barrels of kerosine.

The allocations for the month represent a reduction of 34 tons (290 barrels) of gasoline and an increase of 1946 tons (14,000 barrels) of diesel oil as compared with March. The kerosine production will remain unchanged.

Petroleum Engineers Meet

The question of whether petroleum engineers are restricted by management through assignments not related to their calling was discussed in a symposium at a joint meeting of the North Texas and East Texas Section AIME with the Dallas Petroleum Engineers Club last week in Dallas.

Several executive engineers delivered ten-minute talks on the manner in which their company was using its petroleum engineers. They also expressed their opinions on the manner in which engineers should be used to deliver to their company, and gain for themselves, the full benefit of their practical and academic training.

Participating were: W. A. Alexander, Shell Oil Company and Bowman Thomas, Chief Petroleum Engineer, Humble Oil & Refining Company, both of Houston; William D. Owsley, Halliburton Oil Well Cementing Company, Duncan, Okla.; Norman L. Dorn, Lane-Wells Company, Los Angeles; Frank H. Dotterweich, Texas College of Arts and Industries, Kingsville; and Roger Henquet, Schlumberger Well Surveying Corporation, Houston.

Lester T. Potter, Lone Star Gas Company, served as "interlocutor" and Charles B. Carpenter, USBM, as chairman of the question screening committee.

Administrative personnel also spoke.

Monsanto Given Assignment to Build And Operate Atomic Power Station

First competition of atomic power with the oil industry may come in the form of electricity, it was indicated last week in the War Department-approved announcement that the first experimental plant for peacetime use of the atom will be built and operated at Oak Ridge, Tenn., by Monsanto Chemical Company.

The company, operating on an initial allocation of $2.5 million, expects to start operation late this year or early in 1947. It will be the first nuclear fission, or atom-splitting, plant designed for actual production of electrical energy, plants heretofore erected to utilize atomic energy being intended primarily for creation of the explosive material for the atomic bomb.

The plant will be of "pilot" size. No decision has been reached as to use of the current which will be generated but it will not differ from the power now available from TVA, since atomic energy will be used as the "boiler" to create steam to operate turbines.

Monsanto has accepted the assignment of operating the plant at the request of the War Department, in line with its policy of keeping atomic operations in the hands of private industry, and any patent rights which may result from the experimental work will be vested in the government. Army officials made it clear that the first current produced will not be generated at a cost which will make atomic energy immediately a competitor of other fuels and stressed the need for experiment designed to bring fissionable material "within the range of economic usability," and to provide evidence that might be of value in clarifying any international patent situation that might arise.

Hefty Oil Rate Increase Requested by Railroads

A 25 percent increase in freight rates on petroleum and products, but not to exceed six cents per hundred pounds on shipments in tank cars, was asked of the Interstate Commerce Commission last week by substantially all of the Class I railroads of the country, to become effective May 15.

The carriers, whose efforts for higher rates during the war were rendered ineffective by government opposition, declared a general increase is imperative to meet the critical situation resulting from the combination of increased wages, increased prices for materials and supplies and a severe decline in traffic and revenues.

"With costs going up and volume of traffic and revenues going down, the railroads have passed the point where it is possible to continue to meet the need for adequate and efficient transportation with rates at present prewar levels," the carriers said in their petition. "With returing normal conditions there emerges the naked fact that railroad rates are out of line with other elements of our economy and that something approaching prewar relationships must be restored if petitioners are to continue to provide the public with adequate transportation contemplated by the law."

Independents of Texas Perfect New Organization

Texas Independent Producers and Royalty Owners Association, designed to take care of the problems of the independent, was organized last week and named H. J. Porter, of Houston, president.

E. I. Thompson of Houston was named executive vice-president and secretary. The organization meeting was held in Austin, and the first official act was to urge the abandonment of OPA control of oil prices.

The plan of operation calls for an executive board of 13 members and a board of directors. The State has been divided into districts corresponding to Railroad Commission Districts and there is one member from each district with Dallas and East Texas given two each.

A large number of directors is to be named. The group plans to hold local meetings prior to each statewide proration hearing set by the Texas Railroad Commission, the executive board to meet in Austin the day before the hearing to formulate final plans.

The program calls for a $25 membership fee from each producer, and royalty owners may become full members for $10. An associate membership for small royalty owners is provided, whereby they may become members for $1 per year. In the latter group are farmers and small holders of royalty who might provide general support for legislative or tax programs that the organization may sponsor.

Headquarters of the new organization is to be in Austin, and a budget of $60,000 was approved for the first year. Future developments will probably determine the scope of operations.

Named to the executive board were Walter Henshaw, San Antonio; C. K. McCann, Victoria; Glenn McCarthy, Houston; Guy Warren, Corpus Christi; W. W. Lechner and W. F. Nenny, Dallas; Arch Rowan, Fort Worth; Bryan Payne, Tylor; J. D. Sandifer, Breckenridge; M. D. Bryant, San Angelo; C. V. Lyman, Midland; Ed Kadane, Wichita Falls, and A. E. Hermann, Amarillo.

Offers Files Gratis

J. W. Cain, mechanical engineer in the Niels Esperson Building, Houston, has "quite a few issues of 1940 and 1941" of THE OIL WEEKLY which he will give away for a reference file. Anyone interested is asked to contact him direct.

Vigorous Exploration Policy and Peacetime PIWC Urged by Davies

PAW officials last week told members of the petroleum group of the House Interstate Commerce Committee that, as was the case after the close of the first World War, when production was 60,000 barrels daily under indicated demand, so did the end of the second World War find the United States under the necessity of immediately correcting a situation where consumption was above maximum efficient production levels.

The end of the war was not followed, as anticipated, by a sharp drop in demand which would bring production levels below the danger line.

The picture of the current situation was drawn in the presentation of an oral report on the broad accomplishments of PAW, which will lock its doors at the end of this month. The report was asked by Chairman Clarence F. Lea of California for the permanent record of how oil met the call of war.

Introduced by Deputy Administrator Ralph K. Davies, the heads of the several PAW divisions outlined how oil production and the manufacture of war products was increased from 1941 to 1945.

Howard Page, director of the program division, said that 1946 world requirements, exclusive of Russia and Axis territories, will be about 6,800,000 barrels daily, only 700,000 barrels less than PAW had estimated would be required if the war continued, and 550,000 barrels more than the agency had calculated six months ago.

Page said aviation gasoline requirements were less than a tenth of their war level, about 50,000 barrels daily, while demand for motor gasoline this year would be 2,415,000 barrels daily and for residual fuels 2,150,000 barrels, with world crude production estimated at 6,500,000 barrels, or within five percent of mixiumum efficient operation.

Domestic production now, he said, is 16 percent above 1942, while foreign output is up 80 percent. The latter had been scheduled to rise 110 percent above 1942 had the war continued, and is expected to be about double the 1942 figure for 1946.

East Indies Off

All foreign operations are now at maximum, running 2,120,000 barrels a day, with the East Indies the only area where more oil could be produced, operations there being about half of schedule because of the political situation.

Page said that estimates on Russia vary, but indicated the most acceptable current figure is between 600,000 and 700,000 barrels daily. Production in Axis areas was placed at 150,000 barrels daily.

Although foreign production will increase as materials, manpower and capital become available, he said, it is not expected that it will do more than keep pace with foreign demand for the next two or three years.

Philip Bohart, director of production, stressed the need for accelerated wildcatting and development drilling, emphasizing that past experience has demonstrated that price and exploration are directly related to each other. He also pointed out that with from 22 to 30 percent of wells drilled resulting in dry holes, exploration is under a heavy burden and needs every possible encouragement.

While many in the industry believed sufficient oil to win the war could be produced "by turning the valves," PAW studies showed that had there been no wildcatting after Pearl Harbor, maximum efficient production capacity would have been 400,000 barrels daily short of requirements and had there been no drilling of any sort it would have been 900,000 barrels short, Bohart declared.

As it was, he said, taking into consideration the reduction in civilian demand because of rationing, the net loss in reserves due to the war was of the order of 500 million barrels.

Tetraethyl Lead Shortage

Another grave problem confronting the industry is in connection with tetraethyl lead, A. P. Frame, director of refining, said. Because there are only two companies producing this product, PAW during the war sought to build up a stockpile as insurance against interruption of production, and at the close of the war there was close to 40 million pounds in inventory. However, he continued, the lead situation has become worse since the end of the war, the stockpile has been entirely dissipated, and there is great uncertainty as to future supplies.

The average home-owner oil consumer will heat his house more economically as a result of his war experience, it was predicted by Walter Hochuli, director of distribution and marketing.

Although it was estimated that civilian gasoline consumption would not regain the 1941 level before late this year, experience showed that the 1941 rate was reached relatively quickly after the end of the war, and 1946 consumption will be slightly more than in the last prewar year, he said.

Asked by Chairman Lea if he felt the system worked out for handling distribution and marketing should be changed in the event of another war, Hochuli replied that he would make no changes.

The inadequacy of information available on Russian reserves and operations was emphasized by W. B. Heroy, director of foreign production, in explaining how world reserves are divided among the various nations, bringing from subcommittee members questions as to how better data could be obtained. It was explained by Davies that the matter had been taken up repeatedly with the State Department, which now proposes to locate a petroleum attache at Moscow, in which event the situation may improve. During the war, Heroy reported, the United States furnished Russia with oil-field equipment equal to one year's needs of that country. It also furnished much of the equipment used in Middle East development, but a great deal was supplied from England, he said.

Winding up the presentation, Davies commented upon the product shortages which have occurred since the end of the war, attributing the Navy's bad fuel situation entirely to price.

Davies said that from the standpoint of national defense, our position as regards petroleum supply has deteriorated over the last five years, and called for a sound national oil policy having as one of its cardinal points the development of resources sufficient to meet emergencies.

This, he said, should be done through domestic exploration by a "strong and enterprising" industry, given price levels and other incentives to warrant the money risk involved; the wise conservation of our resources, but by federal authority only in the event "all other means fail to prevent practices injurious to the national welfare and security"; government development of the new continental shelf reserves, the cost and risk of which will be prohibitive for private capital; continued development of synthetic fuels, and extensive development of foreign oil supplies by American companies with the full support of the government in their dealings with foreign nations.

Davies pointed out that the Anglo-American petroleum agreement is a first step toward orderly development of the international oil trade which, if ratified, will greatly advance the cause of American oil abroad.

Wants Central Control

Davies advocated centralization of oil and gas activities in the Interior Department, and urged that some sort of a petroleum council be created as the peacetime counterpart of the PIWC.

"I do not envision as necessary any increased federal control over the operations of the oil industry," Davies emphasized. "I am suggesting merely a rearrangement along logical organization lines of the many functions already performed under existing law. The need for additional powers is lessened—not increased—through developing a better coordinated and more efficient conduct of those activities relating to oil which are at present the business of the federal government.

"Our wartime experience in oil showed how important it is that the government maintain a close relationship with the petroleum industry. I am perfectly certain that the success achieved with oil in the war would not have been achieved without the PIWC. And I think it just as essential, as the federal government deals with oil matters in peacetime, that it have similar industry support."

Only non-PAW witness to appear, API President William R. Boyd, Jr., wartime council chairman, paid tribute to the men of the oil agency.

Higher Texas Allowables for April Appear To Be in Demand for May

There is still a shortage of Texas crude and the higher allowables ordered for April must be continued through May. This was the consensus of operators who attended the statewide proration hearing at Austin last Friday.

Several independent refiners said that they had yet no relief as a result of the increase ordered by the commission for April. They reported that major companies from whom they purchase are still so short that no oil is available for the independent to buy.

However, they thought that if April allowables are continued into May, then the larger purchasers will have stocks on hand sufficient to meet the full demand. Some independents had received oil and were being taken care of to a degree. However, none had as much oil as he needed.

Major purchasers explained that when the increase was ordered they were about to scrape bottom. The Cities Service refinery at Lake Charles, La., has been running with a supply of only 12 to 24 hours on hand. American Liberty at Texas City is shut down, but will get the oil it needs if the higher allowables continue.

The Bureau of Mines confirmed its original estimate of Texas demand of 2,050,000 barrels daily for May. Meanwhile purchasers had filed with the commission nominations to buy 2,352,417 barrels, 24,793 more than they wanted in April.

East Texas Drops

There was a considerable adjustment indicated by the nominations, however. In the Gulf Coast nominations were up 28,861 barrels daily. They were up 12,439 barrels for East Central Texas, and 20,507 barrels for West Texas. However, nominations from the East Texas field dropped 40,648 barrels per day.

As the hearing began, Glenn McCarthy, Houston independent producer, speaking for the Statewide Committee of Independent Producers, read a statement attacking OPA and charging it with the current confusion and demanding that it be eliminated. He urged that if OPA does not act voluntarily, that on June 1 the Railroad Commission close down Texas oil wells for 30 days or until crude storage drops from 220 to 160 million barrels.

H. J. Porter, president of the newly-formed Independent Producers and Royalty Owners Association, asked the commission to make no changes in May allowables, but said his association did not want purchasers to increase stocks. This was the first appearance for this association which plans to have a representative at each statewide hearing.

Republic Oil Refining Company, Eastern States Petroleum Company, American Liberty Oil Company, Cities Service Refinery (Lake Charles), Crown Central, Pan American and Cosden at Big Spring all reported a shortage of crude. Each had made numerous attempts to purchase oil, but none had met with more than part success. Only American Liberty was shut down completely.

The plants, however, thought they would get the oil they needed if the Railroad Commission does not cut allowables again.

Among the major companies, Humble, Atlantic, Sinclair, Shell and Stanolind reported that they were short. All asked that April allowables be continued into May.

Gasoline Market Firm

American Liberty reported a firming of the gasoline market and numerous opportunities to sell either gasoline or other oils, none of which they had on hand. The tone of the gasoline market was reported firmer by various operators.

The commission announced that it has been studying dual completions, and indicated that it may abandon granting permits for producing by this method since materials are becoming available.

Commissioner Thompson explained that the commission is not sure that allowables are produced from the sands they should be in all cases, and that it is informed production through the annular space is less efficient than through the tubing. There are other factors in doubt and he asked that company engineers study the problem so that when called upon they can supply the commission with necessary information.

Chairman Culberson announced that the commission is considering requiring an operator to file an electric log of each well. In addition to this, the commission may require an affidavit on the testing of both surface casing and oil string. This becomes necessary because the commission staff is too small to witness all these tests, Culberson explained.

Demand for other states has not been worked out, but it is expected the national figure will remain practically at its present level of 4,620,000 barrels daily, Washington reported.

Interdepartmental Oil Requirements Committee found that stocks of light fuel oils are increasing, while those of gasoline are showing a downward trend expected at this time of the year.

The only sore spot in the situation is in heavy fuel oil, and there the problem is one of price rather than lack of basic crude, and present crude operations are seen as sufficient to take care of the situation.

Bureau of Mines officials anticipate that operations for the next month or two should be kept up at pretty high levels. After midyear, the picture will begin to become clearer and, since gasoline demand so far has been considerably higher than anticipated, it is possible that a slight downward revision of operations may be necessary.

Crude Oil Production in the United States

(Estimates compiled by the OIL WEEKLY. All figures indicate daily averages in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED April 20	April 13
Alabama	1,100	1,050
Arkansas	77,500	77,350
California	858,400	854,800
Colorado	24,800	23,750
Florida	100	100
Illinois	207,700	210,450
Indiana	20,500	18,500
Kansas	262,400	259,150
Kentucky	31,000	32,500
Louisiana	371,550	370,800
North Louisiana	84,750	84,000
South Louisiana	286,800	286,800
Michigan	48,400	45,950
Mississippi	55,700	55,050
Missouri	100	100
Montana	20,100	20,150
Nebraska	750	750
New Mexico	96,000	96,550
New York	13,700	13,250
Ohio	6,700	6,650
Oklahoma	378,750	379,400
Pennsylvania	37,450	37,000
Tennessee	35	35
Texas	2,054,600	2,054,600
Upper Gulf Coast	480,700	480,700
East Texas Field	372,000	372,000
Rest of Eastern Texas	139,700	139,700
Southwest Texas	326,500	326,500
West Texas	495,000	495,000
North Texas	158,700	158,700
Panhandle	82,000	82,000
West Virginia	8,250	7,850
Wyoming	110,500	105,500
Total United States	4,686,085	4,671,285

Total stocks, foreign and domestic, April 13, as reported by the Bureau of Mines were 221,260,000 barrels with a daily average production of 4,691,000 and runs to stills 4,636,000.

May-June Allowable Gain Is Asked in Louisiana

Increases in allowable oil production in Louisiana was requested of the State Conservation Commission last week by two oil companies whose spokesmen said it had been necessary to draw on oil reserves lately to retain refineries at the current level production.

George A. Wilson, of Standard Oil Company of New Jersey, cited an increased need for crude, and asked a production increase to the level allowed before the recent production cut.

F. E. Heath, of Dallas, chief petroleum engineer for The Sun Oil Company, said his company was in need of more crude and asked an increase in allowables at the Delhi, West Delhi, Big Creek, and South Big Creek fields, main supply sources. M. A. Raw, attorney for The Sun Company, said it expects to withdraw 200,000 barrels of crude from storage during April at the present rate of withdrawal.

Commissioner Joseph L. McHugh called the hearing to set oil and gas well and field allowables for the 61-day period of May and June.

Corrosion Project Research Group Makes Report at NGAA Convention

Technical papers on the study of corrosion in the tubing of gas-distillate producing wells featured the 25th Silver Anniversary convention of the National Gasoline Association of America held last week in Dallas. More than 700 members registered.

All officers were re-elected, headed by J. H. Dunn, Shamrock Oil and Gas Corporation, president. A new vice president, R. D. Gibbs, Union Oil Company of California, was named to take his place along with the following re-elected as vice presidents: John B. Atkins, The Parade Company; Paul M. Raigorodsky, Glen Rose Gasoline Company; and C. R. Williams, The Chicago Corporation. William F. Lowe was re-elected secretary-treasurer.

First paper on corrosion was that of T. S. Bacon, Lone Star Producing Company, Dallas, and chairman of the NGAA Corrosion Research Project Committee, "Corrosion in High Pressure Gas Wells." Bacon's paper was a report of the overall program instigated for the study of corrosion. The NGAA Corrosion Research Project Committee was organized April 12, 1944, for determining causes of, and suggesting remedies for, corrosion of equipment utilized in distillate production, including tubing, casing, well-head connections, and flow lines. This committee is made up of technical representatives appointed by each of the 26 participating companies. Committees of API and the National Association of Corrosion Engineers cooperated and the National Bureau of Standards also has assisted. Except for the rather extensive services supplied by the NGAA, he said, the sponsored program of institutional research is financed by contributions from interested companies, with present contributions totaling $41,500. Of this amount, approximately $30,000 will have been expended when present commitments expire July 1, 1946. The NGAA has sponsored projects at the U. S. Bureau of Mines, Battelle Memorial Institute, and at the University of Texas.

Conclusions Stated

On the basis of the presently available information, the committee concludes:

1. Any gas-distillate well producing from a formation more than 5000 feet in depth, at a reservoir temperature above 160° F., and a pressure above 1500 psi., may show corrosive attack if the gas contains carbon dioxide in excess of 0.2 percent by volume.

2. Carbonic acid, the lower fatty acids, and possibly hydrogen sulphide, are responsible for most of the observed corrosion.

3. The elevated temperatures and pressures of operation of distillate wells increase the rates of corrosive attack by the above acids.

4. Corrosion may be largely prevented in certain wells producing the above acids by the natural formation of a film on the exposed metal surfaces that protects the underlying metal from corrosion.

5. Corrosion may be substantially reduced in certain wells that are naturally corrosive by the addition of an inhibitor, or by the addition of an alkali.

6. Corrosive distillate wells should not be produced through the casing annulus.

7. Alloy tubing should not be run in wells completed with ordinary steel casing until definite proof of absence of galvanic attack has been obtained.

Sodium Chromate as Inhibitor

Bacon's paper was followed by that of C. K. Eilerts, H. A. Carlson, R. V. Smith, F. G. Archer, and V. L. Barr, of the U. S. Bureau of Mines, Bartlesville, Okla., "Tests of Sodium Chromate as an Inhibitor of Corrosion in Gas-Condensate Wells." Eilerts reported that laboratory and field tests had shown sodium chromate to be a promising inhibitor of corrosion in gas-condensate wells. The injection of sodium chromate solution into wells seems entirely practicable in gas-condensate fields if the space between the casing and tubing is open, according to Eilerts, who stated also that when a solution of a solid inhibitor is used in fields where reservoir pressure has declined, enough water should be injected to saturate the gas from the formation and prevent the precipitation of a deposit in the tubing. Tests in progress indicate that wells in which the annular space is closed may be treated by dropping sticks of solid sodium chromate into the tubing against the flow of fluid.

Eilerts stated that the causes of corrosion in gas-condensate wells are not well understood and the Bureau of Mines has tried to find an immediate means of controlling the corrosion rather than to use its personnel in a fundamental research on the nature of the metal losses which can weaken equipment to the point of failure in six months of exposure. He said two principal approaches to the problem are being made: one, a search for an inhibitor or treating agent which will prevent the corrosion of gas-condensate well equipment; and two, the testing of alloys, which will resist the corrosive effects of the fluids from wells now affected.

Tubing Caliper Developed

"Finding Corrosion Pits by Tubing Caliper," was presented by Preston E. Chaney, Sun Oil Company, Beaumont, Texas, who said the appearance of corrosion problems in tubing strings of gas-condensate wells suggested the need for some means of measuring the extent and location of corrosion damage, which did not involve killing the well and pulling the tubing for a surface inspection. Work undertaken in the Sun Oil Company's Beaumont Division Laboratories, toward the development of a tool for this purpose has led to the production of the Chaney-Barnes tubing caliper.

The caliper, entirely mechanical, is adapted for running in the tubing on a measuring line, using equipment similar to that required for bottom-hole pressure and sampling operations.

Dr. Donald L. Katz, University of Michigan, Ann Arbor, presented "Sampling of Two-Phase Gas Streams from Cycling Wells," in which he stated that satisfactory sampling conditions have been determined for straight-pipe sections, either vertical or horizontal. The available date indicate that these conditions determined on are adequate for reliable results for liquid contents up to 12 gpm.

A discussion also was given by T. W. McGuire, Cotton Valley Operators Committee, Cotton Valley, La.

"Chemicals from Lighter Hydrocarbons," prepared by J. E. Bludworth, Celanese Corporation, Corpus Christi, traced the evolution of chemical manufacture in the United States and discussed the tremendous strides made in synthetic-organic chemistry, particularly as it affects products that are petroleum derivatives.

Expanded Market Needed

Other papers included "The Behavior of Hydrocarbon Material in Condensate Reservoirs," by Dr. Frank H. Dotterweich, Texas College of Arts and Industries, Kingsville, and Dr. F. O. Bennett, Engineering Consultant, Hous-

Hanlon Award Made To Dr. W. N. Lacey

Dr. W. N. Lacey, professor at California Institute of Technology at Pasadena, has been awarded the Hanlon Award for meritorious service to the natural gasoline industry for 1946. The action was taken by the Natural Gasoline Association of America at its convention last week in Dallas.

An international authority, Lacey has authored nearly 80 scientific articles on physical and chemical properties of hydrocarbons. He has made original researches into phase equilibria of hydrocarbons and application to reservoir mechanics. His work also included measuring and computing values of the thermodynamic properties of pure hydrocarbons and hydrocarbon systems, which has obviated the necessity of operating reservoirs under primary pressure control for orderly production of petroleum and natural gas.

Lacey was born in San Diego, was graduated with an A.B. degree at Stanford in 1911, received the Ch.E. degree in 1912, M.S. in 1913, and Ph.D. at the University of California at Berkeley in 1915. Beginning as an instructor in the Institute in 1916, he has been a full professor since 1931. A lieutenant in the Ordnance Department in World War I, he served with the Office of Scientific Research and Development in World War II.

ton, and "High Pressure Absorption," by Henry N. Wade, Stearns-Roger Manufacturing Company, Denver, Colo.

NGAA President Dunn's paper, "Plans and Opportunities for the Natural Gasoline and Cycling Industries," showed that the natural gasoline industry must have an expanded market to maintain the great forward strides it has made in the past several years due to the war. The industry finds itself overflowing with materials for which the demand has been seriously reduced, he said. Prepared discussions were delivered by Ray E. Miller, Hanlon-Buchanan, Inc., Tulsa, and Elmer F. Schmidt, Lone Star Gas Company, Dallas.

"The Refiner Looks at Natural Gasoline," by James W. Vaiden and F. E. Fisher, Skelly Oil Company, Tulsa; "The Antiknock Properties of Materials Resulting from Superfractionation of Natural Gasoline," by T. W. and H. R. Legatski, Phillips Petroleum Company, Bartlesville, Oklahoma, and "Cycling Products as Motor Fuel," by Dr. G. G. Brown, University of Michigan, Ann Arbor, were presented.

NGMA Elects

Officials of the Natural Gasoline Men's Association equipment men's group, were elected as follows: president, Fred J. Wetzel, Ingersoll-Rand Company, Tulsa; vice-presidents, John Heinzerling, Vinson Supply Company, Tulsa; and Roy Bush, Merco Division, Rockwell Supply Company, Tulsa; treasurer, J. A. Kneble, of Tulsa.

Directors elected at this session are V. C. Canter, Jones & Laughlin Supply Corporation, Tulsa; Cade Clover, Westcott & Greis, Tulsa; Dallas Deems, American Air Fan Filter Company, Tulsa; L. Dresser, Dresser Engineering Company, Tulsa; Warner Lewis, Warner Lewis Company, Tulsa; J. A. Kneble, J. A. Kneble Company, Tulsa; J. N. McClure, Elliott Company, Kansas City; Paul Wallack, Walco Engineering & Construction Company, Tulsa; Fred J. Wetzel, Ingersoll-Rand Company, Tulsa.

Mississippi River Fuel Would Expand Its Lines

Mississippi River Fuel Corporation has filed application with the FPC for authority to expand its system to increase the deliverable capacity by 50 million cubic feet daily to an estimated 183 million cubic feet by constructing 264.5 miles of 22-inch, 13 miles of 12-inch and one mile of six and ten-inch manifold river-crossing loop lines and adding additional horsepower at all but one of its compressor stations.

The application stated that it has supply contracts with a number of companies running to 1951 for gas from the Monroe field and has entered into a new agreement with United Gas Pipe Line Company for 20 years supply up to the full requirements of the Mississippi Corporation from the Carthage field, Texas. Total cost of the proposed additional facilities was estimated at $11,574,000, of which $9,792,000 would be required for the 22-inch loop line.

Anglo-American Oil Pact and Subsidy For Stripper Wells on Compact Agenda

Two items are scheduled already for the summer meeting of the Interstate Oil Compact Commission which is to be held in Michigan—the Anglo-American oil treaty and permanent subsidies to stripper well operators. Both subjects were discussed briefly at the meeting in Tulsa on April 13, but compact members felt insufficient notice had been given and that neither was presented adequately.

Likewise scheduled for consideration is the plan to expand the compact's statistical section. This program has been advocated by the secretariat of the compact and by some representatives. However, the extent of the program has not been determined.

The new committee of economists which met for the first time in Tulsa have been requested to study the problem with the view to determining compact needs. It is probable that they will make recommendations at the Michigan meeting. Since the members of this group, headed by Dr. Richard Gonzalez of the Humble Oil & Refining Company, have at their disposal already a large amount of statistical material, it is probable that they will take into consideration only that data which is not now available through sources open to them such as the state regulatory bodies and the American Petroleum Institute.

The discussion on the Anglo-American treaty came late in the session. D. W. Hovey, Houston independent, spoke briefly in opposition and then called on Hiram King, vice-president of Sinclair Prairie Oil Company, who supported Hovey's stand. Governor Robert S. Kerr of Oklahoma, who was presiding, asked whether anyone cared to speak in support of the treaty, but there was no response.

Similarly, the question of subsidies for stripper wells developed little interest. The commission was urged to go on record supporting an act of Congress that would provide a subsidy of 35 cents per barrel for oil produced from stripper wells. There was no opposition.

No OPA Stand

The commission fought shy of a resolution which would have urged OPA to release price controls on crude and all products simultaneously. Insiders said the plan was abandoned because representatives of several of the states felt that the question of fixing prices for crude oil was beyond the scope of the compact. Proponents of the resolution fear that OPA plans to lift control of prices on gasoline and lubricating oil and retain them on crude and other products. They believe that this will have an adverse effect on the oil price structure. The OPA has denied planning such a move.

Meanwhile it was reported generally that OPA ceilings on crude and products would be eliminated about June 1, and that the price of crude would then be increased 25 cents, and that products prices would be increased proportionately. This appeared to be an arrangement satisfactory to both independent producers and major purchasers.

The economics group anticipates a more accurate prediction at the summer meeting. Developments during the war, unexpected activities during the early days of the reconversion period, and the effects of governmental control have contributed to the uncertainty.

Economists explained that construction of new refineries and pipe lines since 1941 has altered the storage picture materially, that large quantities of oil are required to fill new lines and terminals, and that exact figures on all of these installations is not yet available. In some cases, refineries which once operated on a common stream of crude now use two or more types, each of which requires adequate working stocks. Until these storage requirements have been ascertained, no accurate picture of necessary working stocks can be seen.

Gasoline Demand Up

No one had foreseen the vast quantities of gasoline that would be required immediately after the war to transport the traveling public, long prohibited from extensive driving because of gasoline rationing and other restrictions. Fewer cars had gone off the road during the war than had been estimated, and these added to the demand materially.

Continued price restrictions prevented normal adjustments in refinery operations, especially after OPA indicated that it would increase prices. Holders of inventories hesitated to sell at prevailing prices and declined to enter into long-term contracts, realizing that they would lose when the rise come. In many instances, producers declined to move oil from leases until their tanks were full, which at times contributed to the shortage of crude oil.

Economists believe that by the middle of July when the next compact meeting takes place, conditions should be adjusted to the point where reasonably accurate predictions can be made based on reliable figures.

Meanwhile it seemed likely that the compact's influence will be expanded by the membership of some additional states in the near future. Several states which are not members sent observers to the sessions who indicated that they would report favorable on the compact to their governors and legislatures.

Only One Plant Left

The Navy Department last week was down to its last refinery out of 53 plants and pipelines taken over in October.

The department announced it had turned back to its owners the American Liberty Oil Company refinery at Texas City, leaving it only with the Gulf Refining Company plant at Toledo.

Everything from CRANE for Marine Terminal Piping

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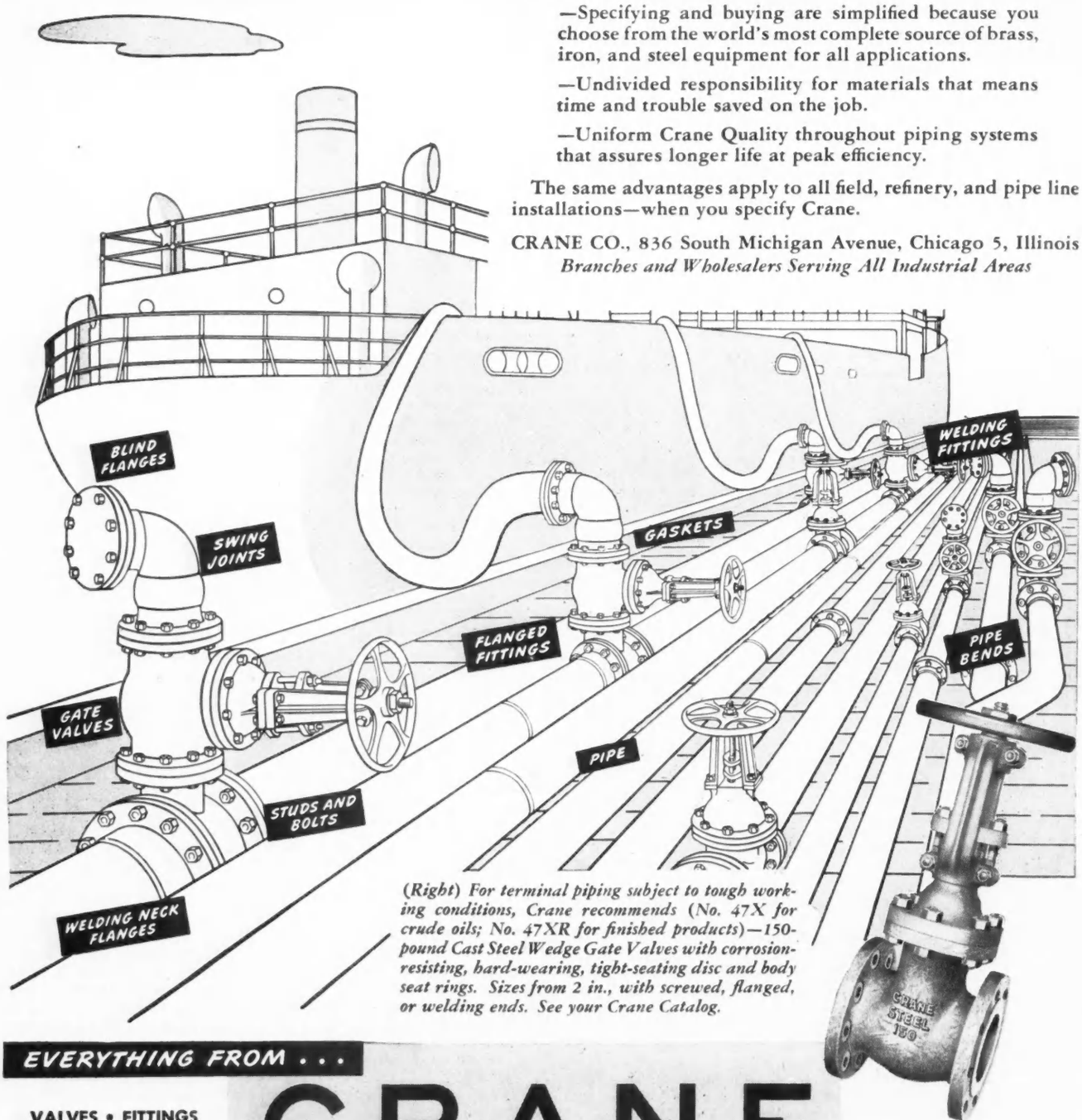

(Right) For terminal piping subject to tough working conditions, Crane recommends (No. 47X for crude oils; No. 47XR for finished products)—150-pound Cast Steel Wedge Gate Valves with corrosion-resisting, hard-wearing, tight-seating disc and body seat rings. Sizes from 2 in., with screwed, flanged, or welding ends. See your Crane Catalog.

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Left, journey into the swamp during high water gives only infrequent glimpses of the railroad track. The portions visible are usually the trestles which float. Parallel to the right-of-way, a flooded ditch from which the road bed was constructed provides an excellent canal for personnel boats.

Right, transmission line of Gulf States Utilities Company is maintained by personnel living at Bayou des Glaise station where a small store is also located. For inspection and repair of the power line, a small motor car is available which formerly was used on the main line of the Southern Pacific.

Atchafalaya Transport

UNIQUE IN OIL FIELDS

By GORDON B. NICHOLSON, Staff Writer

AMONG the unusual methods of conveying personnel to oil fields is the one used by Humble Oil & Refining Company in reaching its isolated Bayou des Glaise field deep in the swamps of the Atchafalaya River in Iberville Parish, Louisiana. The usual combination of automobile and boat, standard methods of travel in South Louisiana oil fields, are employed, but in addition a nine-mile ride on standard gauge railway conducts the traveler through the heart of the swamps, providing an intermediate transportation between the end of the automobile road and the boat landing on Whiskey Bay Pilot Channel.

Humble maintains a fleet of small motor cars which make daily runs over the section of line going into Bayou des Glaise, having engines up to 90 horsepower and reputedly capable of speeds up to 80 miles per hour over suitable roadbed. The motor cars run forward or backward equally well, an important asset as the railroad has no turnarounds.

Personnel traveling into the Bayou des Glaise field by rail ride in trailers pulled behind the motor cars. The trail cars are equipped with comfortable seats, are enclosed, and for use in cold weather have kerosine heaters which eventually will be replaced by heaters burning butane.

Water level in the Atchafalaya River is the primary consideration in travel through this swamp country, and it effects profoundly all life and activity within its reach, including efforts devoted to finding and producing oil. In drilling wells, preparing drilling sites, and transportation into the field, the seasonable variance in water level must be considered before plans for development are completed. Even use of the railroad into the swamps depends on the river height as the rail is only usable during low water periods when many of the canals are too shallow for boats. When the water rises, the canals fill with backwaters and become navigable, but when this happens, the railroad is submerged. As a result, both rail and boats are used, with one serving as complement to the other, and each being necessary in reaching the oil field.

Existence of a railroad is an amazing consideration, and with the arising of the inevitable question, "Why?", the curious observer finds himself involved in an interesting study of Louisiana of bygone days and a revelation of the complexities experienced by civilization in attempts to penetrate the vast Atchafalaya River swampland.

Presence of a railroad line through the swamp is explained by a simple statement which belies the hardships of a futile struggle for its survival. Years ago—three decades, four decades, perhaps longer—a rail line was constructed through the area, trains making daily runs from Port Allen, on the Misissippi River just opposite Baton Rouge, to Lafayette, approximately 50 miles west. Itinerary of the railroad after leaving Port Allen took train passengers through country cultivated for sugar cane and near scattered sugar plantations, with stops at the small settlements of Grosse Tete, Bayou des Glaise, Atchafalaya Station, and Breaux Bridge, terminating at the railroad town of Lafayette.

The trains plied their course through the dreary wastelands which spill over on both sides of the Atchafalaya River until forces of nature took a hand. In 1927, during one of the numerous floods experienced along the big river, many sugar plantations were obliterated forever, and destruction of the main railroad bridge across the Atchafalaya suspended travel on the line. Before the bridge could be rebuilt, another flood reached the basin, and when the waters subsided, more plantations had disappeared, and a second big span, crossing Whiskey Bay Pilot Channel, had also succumbed to the ravaging waters.

Loss of the two bridges caused abandonment of the rail line for regular service, although portions of the line which remained intact were left in place, extending their lonely trail through wild and uninhabited localities. Larger settlements on the railroad survived the loss of transportation facilities, but several of the smaller stations disappeared or shriveled to one or two dwellings for housing maintenance personnel and their families.

During the period in which the railroad functioned through the swamps, a power line of Gulf States Utilities Company was constructed paralleling the right-of-way. Upon abandonment of the rail line, Gulf States arranged to assume control of sections needed for maintenance of the transmission lines, using motor cars as means of transportation.

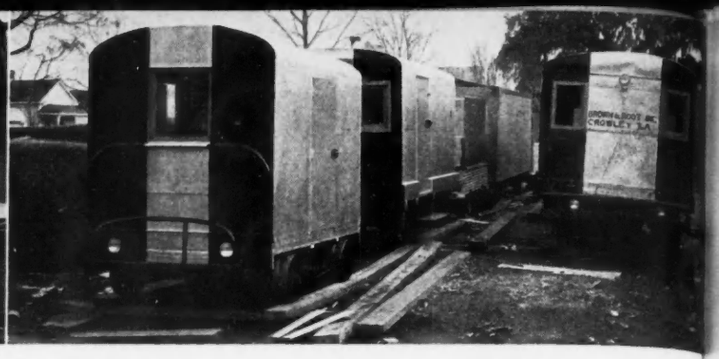
As an aid in prospecting and drilling the oil-bearing structure in the Bayou des Glaise area, Humble obtained permission from Gulf States Utilities to use the railroad line for access into the swamps, and now, when river conditions permit, Humble-operated motor cars speed along the nine-mile section to expedite travel from the Atchafalaya River protection levee into the oil field.

Use of the rail for transportation is not as simple as it appears, for the Atchafalaya River does not surrender easily to man's transgression into its domain. The river is regarded as one of the most treacherous, as well as one of the deepest, in the United States, and its depth has been measured at 210 feet during normal stages. Fed partly by the Mississippi River by means of locks near Simmesport, La., the broad Atchafalaya Basin serves as the main outlet for Mississippi floodwaters to relieve strain on the levees in the lower reaches near Baton Rouge and New Orleans, providing a short route to the Gulf of Mexico for threatened Mississippi River overflows.

Spawned by the Mississippi, the flat Atchafalaya River Basin is bounded on east and west by levees which confine floodwaters racing toward the sea. The levees are miles apart, and during high water the entire area intervening is inundated by waters which back up from the main Atchafalaya channel. Mean low water level in the Bayou des Glaise is only one or two feet above sea level, but the present maximum anticipated level of floodwaters is 28 feet above sea level, which is the height of the levees opposite the field. Levees are now being raised to 32 feet, which elevates the expected high water levels accordingly, with variations between high and low stages reaching about 30 feet.

The Atchafalaya River main channel

A turnbridge at Bayou des Glaise Station is crossed by the motor cars, and they proceed two miles further to the boat landing at Whiskey Bay Pilot Channel. When the river is high, Bayou des Glaise is navigable, and provides a short-cut to the field.



During flood stages in the Atchafalaya River, the railroad bed is inundated and cannot be used. Motor cars and trailers are assembled in Humble's yard at Maringouin for painting and maintenance.

almost loses its identity as it winds through the lowlands, separating into countless small streams and capillaries which form an interminable network of canals and waterways, covering a broad area, later converging again as it nears the Gulf to become a distinct channel in the vicinity of Morgan City. Through the swamps, however, the many small channels present bottlenecks to the drainage of floodwaters.

To relieve the congestion and shorten the path of water attempting to reach the Gulf, Army Engineers developed a vast program which included the dredging of cut-offs to divert the water from meandering canals and empty the basin faster. Prominent among the short cuts is the Whiskey Bay Pilot Channel which diverts water from the Atchafalaya River into a straight southward course to eliminate a wide digression in the river. Humble's drilling activity is centralized in the vicinity of the intersection of Whiskey Bay Pilot Channel with Bayou des Glaise.

Humble's motor car ride starts several miles south of Maringouin, a village on the banks of a bayou where the company maintains offices for handling the Bayou des Glaise operations. The gravel road leading south from Maringouin approaches the levee which forms the east side retaining wall for the Atchafalaya Basin, and also crosses the old railroad line. About 100 yards across the levee, a small building marks the site of the railroad terminal where Humble's motor cars wait to conduct drilling crews and other personnel to the boat landing.

During low water periods, the motor cars move along at 20 to 25 miles per hour, which is about the maximum safe speed of the roadbed, carrying all passengers from the levee terminal to the boat landing at Whiskey Bay Pilot Channel.

The railroad right-of-way was built up from the spoils dug alongside and parallel to the line and has 12 to 15 trestles along the route to Whiskey Bay Pilot Channel, including a turn-bridge which crosses Bayou des Glaise about two miles from its western terminus. The road has only one siding, located near the half-way point, furnishing the only place where cars can pass. However, the line is relatively straight, and vision afforded is such that traffic congestion is infrequent.

The usable section of the railroad ends at a low protective levee at Whiskey Bay Pilot Channel where Gulf States Utilities has a transformer bank adapted to furnish electric power for the Bayou des Glaise field. The levee also marks the site where travelers into the field unload from the motor cars and embark for the final stage of the journey by boat. The trip from the landing to the field is routine for oil personnel familiar with the swamp country, the course proceeding down the waterway for a few miles to the point where Bayou des Glaise joins the cut-off channel. A short ride up the bayou takes the boat to the vicinity of the oil field where Humble has dredged canals to current operations.

During high-water periods, travel into Bayou des Glaise field is accomplished in a different manner, as the railroad, ordinarily perched high above water in an apparently untouchable position, often is covered completely by rising waters. During flood stage, the only portions of the track visible are the bridges which float on the surface.

Use of the railroad is then impossible and the ditch from which the right-of-way was constructed becomes a flooded canal in which the small personnel boats operate. And operate they do! Through the narrow canal, bordered on each side by thousands of cypresses and other trees peculiar to swamps, the boats speed along at 20 or 25 miles per hour, while the uninitiated traveler shudders at the thought of striking logs, roots, or driftwood which may be concealed just below the murky surface of the water. But the Humble boat drivers know their business, and the trips are made regularly without incident.

Shorter Route

When the ditch is flooded and navigable, a shorter route to the field is available. Bayou des Glaise, usually too shallow for water transport, overflows like all other channels in the Atchafalaya Basin, and has water deep enough for use by boats. As a result, the river crafts travel in the ditch parallel to the railroad as far as the turn-bridge at the Bayou des Glaise crossing, but instead of continuing to Whiskey Bay Pilot Channel, turn southward to reach the oil field a few miles below.

The crossing at Bayou des Glaise is also the location of the house in which live the personnel responsible for maintaining the transmission line. The station, formerly the site of the Bayou des Glaise post office, furnishes the only contact with civilization for the men working in the oil field, having a small store equipped with various canned goods and other essential supplies for the benefit of fishermen and trappers who live in the region. Humble personnel and crews on the construction units at work in the field, make frequent trips by boat from the field to the store to supplement field rations or to make emergency purchases.

To expedite movement of maintenance personnel located at the Bayou des Glaise station, Gulf States Utilities provides a motor car with a six-horsepower gasoline engine. The motor car has an interesting history, being over 30 years old and having operated once on the main line of the Southern Pacific Railroad out of Lafayette.

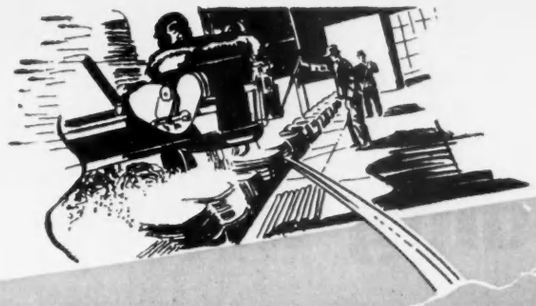
Transporting equipment into the Bayou des Glaise field is also accomplished by several methods, depending on status of water level in the basin. During low water periods, the company's main landing at Krotz Springs is used for loading barges, with the equipment traversing the route down the Atchafalaya River and into Whiskey Bay Pilot Channel, thence to the intersection with Bayou des Glaise, up the bayou to the company-dredged canals leading into the field.

During high water periods, a shorter and more favorable route is used by the barges, with point of origin being a landing at the small town of Sherburn. Itinerary proceeds through the swollen waters of Big Alabama Bayou and into Bayou des Glaise from the north, directly to the Humble canals and into the field.

The short route is preferable, but usually the water in Bayou des Glaise is too shallow or too log-infested for boats. Current in the bayou is seldom severe, whereas in the Atchafalaya River and in Whiskey Bay Pilot Channel it is always a troublesome problem. Barges traveling downstream from the Krotz Springs landing require about 2 to 2½ hours to complete the 28-mile journey into the field. But the return trip is a different story, with the same barges, combatting the strong opposing current, often needing eight or nine hours to negotiate the distance to Krotz Springs.

Oil produced in the Bayou des Glaise field is conveyed through a pipeline across the bayou to two 6600-barrel tanks located near the banks of Whiskey Bay Pilot Channel. A line from the tanks conducts oil to the terminal which is erected on piling out in the channel and equipped with a flexible hose and other facilities for loading the oil on barges.

Humble's plans for the future provide for a roadway above flood levels to extend the entire distance into the Bayou des Glaise field, following the top of the present levee south from Krotz Springs and an extension of the levee to be constructed by the company into Bayou des Glaise. When the road is finished, cars will ride swiftly through the swamps, and subjugation of another frontier will be complete. But the early exploiters of Bayou des Glaise will long remember the days when developing the oil fields meant daily trips by a combination of road, rail, and boat for deep penetration into the Atchafalaya River Basin.



Youngstown TO PENNSYLVANIA

TO Pennsylvania's oil industry, America acknowledges a debt of gratitude. The Keystone state taught us to use petroleum and its products. "Drake's Folly" of 1859 led to the first "long distance" pipe line (5 miles of 2" pipe), the first trunk line (a 4" line from Oil Creek to Pittsburgh), and a trans-Allegheny line to carry this black gold to eastern markets. Until 1895 Pennsylvania ranked No. 1 in oil.

Today, in Pennsylvania's multitude of shallow wells there is strength. This state holds 12th place in production. Today its 83,230 wells are producing almost exactly at the state's 86-year average. Today its oil continues to make a major contribution to our national economy as it has for more than three-quarters of a century.

Pennsylvania expects to continue as an important oil producer for years to come. Through more than half its colorful oil history, Youngstown has served it with casing, tubing and line pipe. In the future, as in the past, oil operators, whether in Pennsylvania or any other part of the World, can continue to rely confidently on the dependable orange-banded pipe, drill pipe, casing, tubing and line pipe from Youngstown.

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Graphical Prediction Of Water Flooding Intakes

By S. T. YUSTER

Division of Petroleum and Natural Gas Engineering,
The Pennsylvania State College, State College, Pennsylvania

THE prediction of water inputs in a water flooding operation is necessary for determining water requirements and oil production. A simple and rapid graphical method has been developed for obtaining such data. The method is very flexible and of the four variables effective permeability, time, cumulative volume, and injection rate, any two can be fixed and the other two can be computed graphically. Certain type problems are considered illustrating the application of the graphs.

SINCE a prediction of the water inputs in a water flooding operation is necessary for determining the water requirements and also the oil production, it would be highly desirable to have a rapid and fairly simple method available for calculating these quantities. A mathematical and a partial graphical method was developed about a year ago[1]. Since that time the problem has been studied further and a simpler method having a broader range of application has been developed. It is the purpose of this paper to describe the method and to indicate its application.

Certain simplifications have been necessary in the development of the method and they will be considered first. The simplifications involved were that the water being injected is pure and contains no sediment and that there is no reaction between the water and the sand which would tend to change the permeability. It was also assumed that the sand has a uniform permeability in all directions and therefore the water flood will advance radially. While the effective permeability to viscosity ratio of the oil moving in the oil bank in advance of the radially penetrating water is not equal to this ratio for the advancing water, it was assumed to be the same in order to simplify the calculation.

Calculation of Fundamental Graphs

The equations which will be used in this study were given with minor modifications in a previously published paper.[1] They will be recorded here with no consideration of their derivation. The cumulative volume of water injected as a function of time is given by

$$(1)\quad \frac{V}{hF}\left[\log\frac{1.78V}{hFr_w^2}-0.435\right]+0.244r_w^2=\frac{0.00617kPt}{\eta F}$$

and the rate of water injection as a function of time is given in the equation

$$(2)\quad 1+\left(\frac{0.0142khP}{\eta Q}-1\right)10^{\frac{0.00617khP}{\eta Q}}=\frac{0.0253kPt}{\eta Fr_w^2}$$

The symbols have the following meaning and units:

V is the cumulative volume of water injected in barrels.

h is the formation thickness in feet.

F is the fractional bulk volume gas saturation.

r_w is the effective well radius in feet.

k is the effective permeability of the formation to the flood waters in millidarcies.

P is the sand face flooding pressure in psi.

t is the time in days.

η is the viscosity of the water in centipoises at the formation temperature.

Q is the rate of water injection in barrels per day.

The above equations hold only for radial water encroachment and are, therefore, limited in application in a water flood. They apply directly to only a uniform permeability sand but can be adapted to flooding several different permeabilities in parallel.

The limits of radial encroachment in a given permeability stratum will be determined when advancing floods from the various input wells become tangent to one another. This volume in terms of the water to water well spacing, W, is

$$(3)\quad V_r=0.140W^2hF$$

Only the five spot flooding pattern will be considered in this analysis but the methods can be adapted to other well arrangements.

After the formation has filled up with liquid it will reach a steady state flow under the assumption given previously. This steady rate of water injection on production will be given by the five spot conductivity formula

$$(4)\quad Q_s=\frac{0.00154khP}{\eta(\log\frac{W}{r_w}-0.420)}$$

Since equations are available for the radial encroachment and the steady flow rate, it should be possible to interpolate between these regions and obtain a fairly complete water input history of an area. By substituting various values of V and Q in equations (1) and (2) and solving for t it is possible to plot cumulative volume and input rate curves as a function of time up to a point as defined by the cumulative volume given by equation (3).

In order to obtain the time necessary to reach the steadied input rate, use is made of the cumulative volume of water which must be injected per well to completely fill the element area. This fill-up volume is

$$(5)\quad V_f=0.1783\,W^2hF$$

If it is assumed that the input rate between the limit of radial encroachment and the beginning of steady state flow is a straight line, a fair approximation of the input curve may be drawn. The method depends on the fact that the area under the rate curve represents the cumulative volume of water injected over the time interval involved. Since both the injection rate and cumulative volume are known at the limit of radial encroachment and at the beginning of steady state flow, it is possible to calculate the initiation time for steady state flow as follows:

$$(6)\quad V_f-V_r=\frac{Q_f+Q_r}{2}(t-t_r)\ \text{or}$$

$$(6a)\quad t=\frac{2(V_f-V_r)}{Q_f+Q_r}+t_r$$

V_f-V_r is the volume of water to be injected during the interference range (time from the limit of radial encroachment to the initiation of steady state flow). $\frac{Q_f-Q_r}{2}$ is the linear average rate of injection over the period $(t-t_r)$ where t_r is the maximum time for radial encroachment and t is the time to the beginning of steady state flow which is the time required. Equation (6a) simply states that a volume divided by an average rate gives a time. The time given by equation (6a) and the steady input rate gives a point on the rate curve. A straight line is drawn between this point

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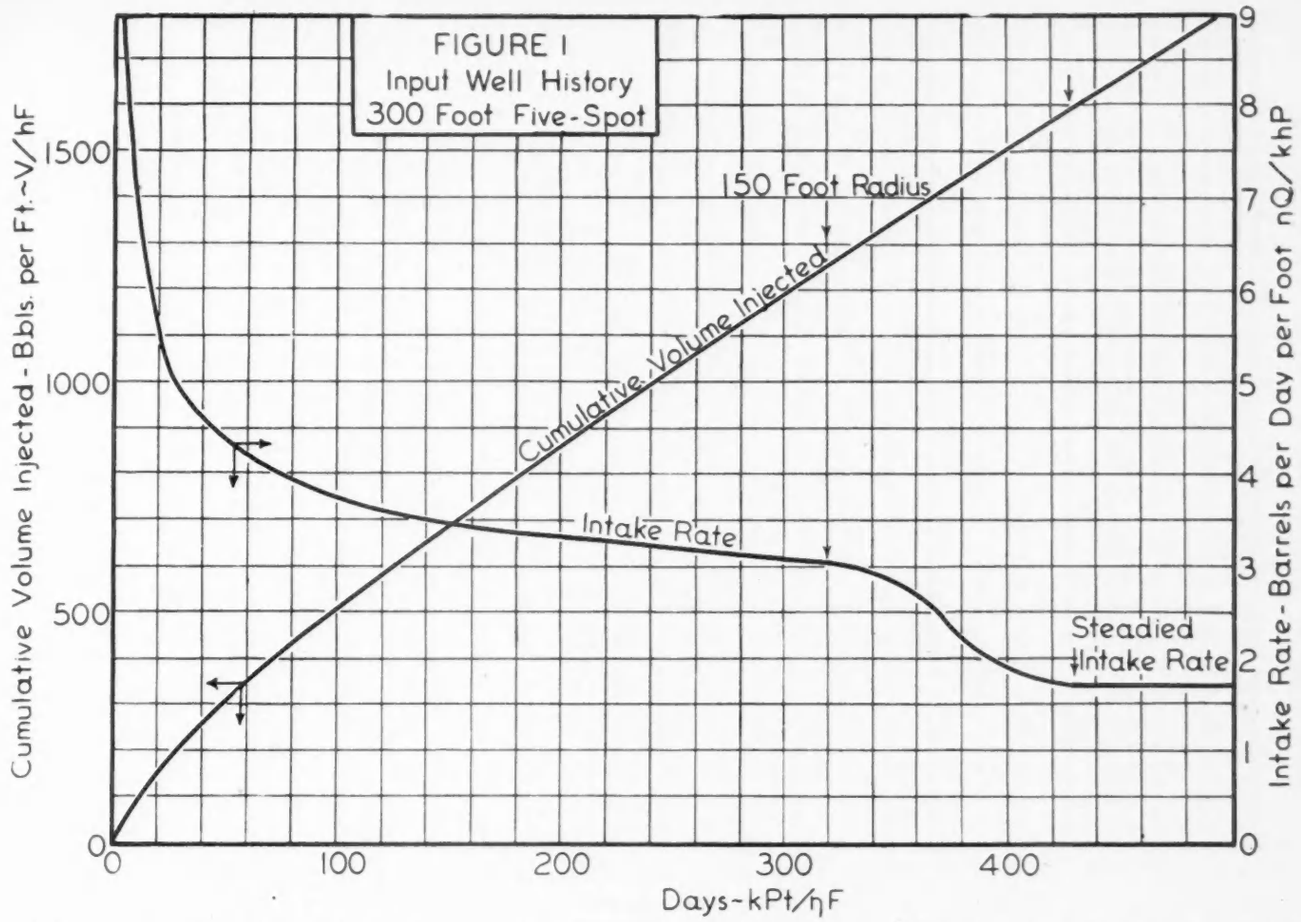

and the rate at the end of radial encroachment. A gradual reverse curve is drawn about this straight line as a base in order to smooth out the over-all curve. The areas above and below the straight line should be balanced.

The time given by equation (6a) and the fill-up volume given by equation (5) will give a point on the cumulative volume curve. Since the rate of input is a constant beyond this point, the cumulative volume curve should be a straight line, the slope of which is equal to the steadied input rate. The interference region should be drawn in to give a smooth curve. The two curves may be checked against one another by comparing the slope of the cumulative volume curve with the absolute values on the rate curve or the areas under the rate curve compared with the absolute values on the volume curve.

Figure 1 shows these two curves drawn for a five spot having the following conditions:

$W =$ 300 feet
$h =$ 1 foot
$k =$ 1 millidarcy
$\eta =$ 1 centipoise
$F =$ 0.1
$P =$ 1000 psi
$r_w =$ 15 feet

These curves give directly the relationship between the variables time, rate, and cumulative volume for the conditions given previously. However, they may be used along with some simple calculations to give the behavior under other conditions. An examination of equations (1) and (2) will indicate how this may be accomplished.

According to equation (1), it is possible to plot V/hF as a function $kPt/\eta F$. This latter ration may be considered as a complex time function with k and P substituting directly and η and F substituting inversely for time. Similarly equation (2) gives $\eta Q/khP$ as a function of the above time ratio. Figure 1 may then be considered as a plot of X, a time function, versus Y, a volume function on the left hand axis and a rate function on the right hand axis.

General Application of Fundamental Graph

In order to apply Figure 1 to conditions other than those used in obtaining it, the variables must be corrected to the new conditions. This is accomplished by substituting the ration of the actual value of the variable to the value used in calculating the figure in the time, volume and rate functions. For example, if 2000 pounds per square inch were the sand face flooding pressure, the ratio of 2000 to 1000 or 2 should be substituted for P in the time and rate functions along the X and right hand Y axis respectively. Similar substitutions should be made for all the variables.

If the cumulative volume and injection rate are required for a given stratum at some given time, the appropriate factors are substituted into the time functions and the corresponding volume and rate values read on the graph. By equating these values to their respective functions with the corrected ratios substituted for the variables, the cumulative volume and the rate under the conditions may be obtained. Repeating such calculation for several strata in parallel and at a series of times and taking a summation of the resulting V's and Q's, the cumulative volume and rate curve for the well in question can be calculated as a function of time. Using Figure 1, it is possible to compare the actual well behavior with the ideal. (The general application of Figure 1 to the calculation of water inputs is described in detail in the reference [3] already given.)

It should be pointed out that the method of correcting for the variable F when it is different from the value used in plotting Figure 1 holds only in the radial encroachment region. This correction should not be made for F in the steady state region. While not exact, it was assumed that the same method can be used to correct for F in the interference region as in the radial encroachment region.

If the cumulative volume per foot is required for a time which is beyond the limit of the graph, it must be calculated. This is accomplished by adding to the cumulative volume at the initiation of the steadied rate the product of the days in excess of the steadied time and the steadied rate. A cumulative volume of 1610 barrels at 428 days represents the conditions at steadied rate. The cumulative volume injected at 528 days would be 528—428 times the steadied rate of 1.75 or 175 plus 1610 which is 1785 barrels. In equation form and including the factors which might be corrected

$$(7) \quad V = V_r + (t - 428)\, 1.75 \left(\frac{kP}{\eta}\right)^2$$

The squared parenthetical expression contains two equal correction factors; one applies to the time term $(t - 428)$, and the second applies to the daily date or 1.75. The same method as was discussed previously must be used to correct the variables in the above equation

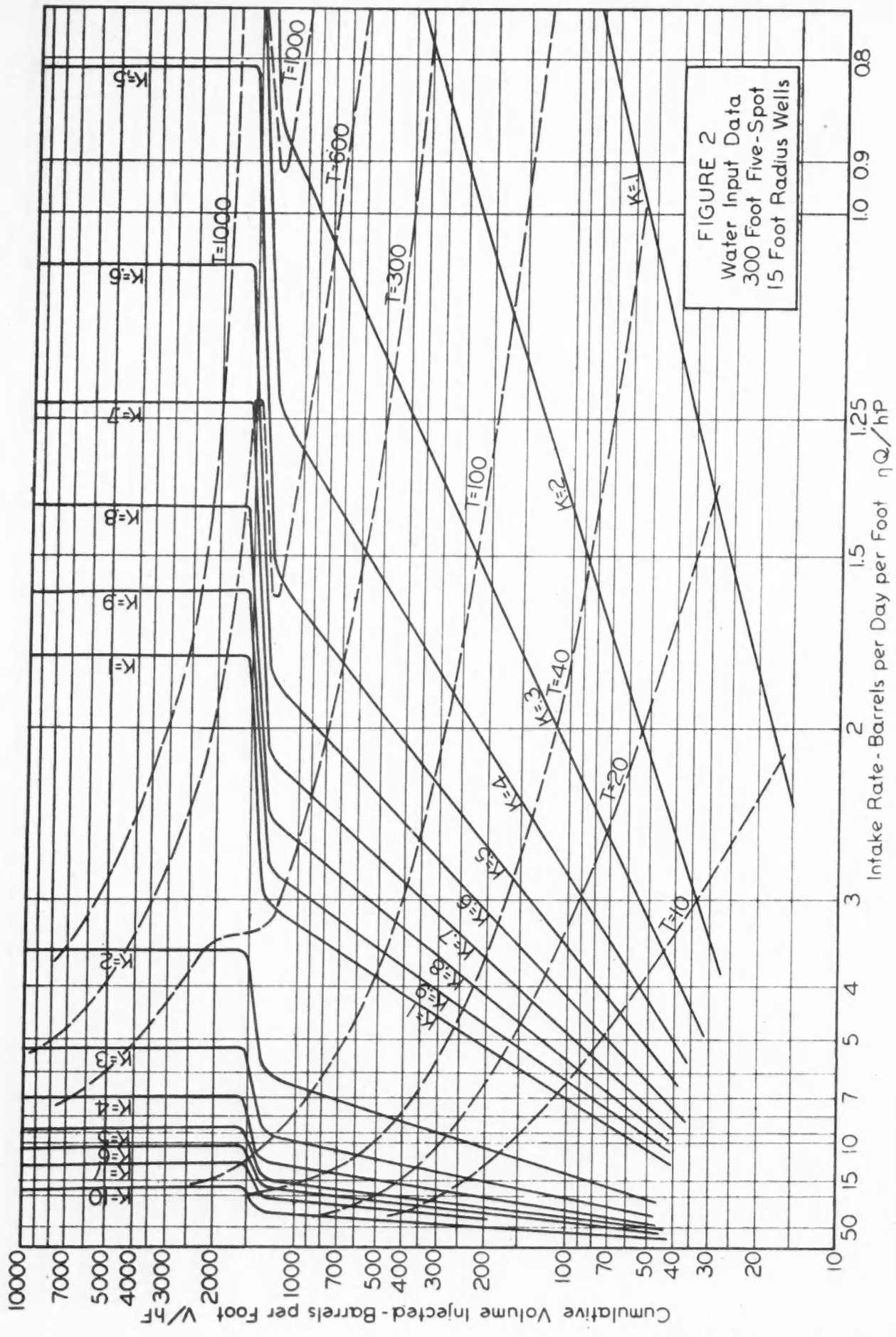
FIGURE 2
Water Input Data
300 Foot Five-Spot
15 Foot Radius Wells
Cumulative Volume Injected - Barrels per Foot V/hF
Intake Rate - Barrels per Day per Foot ηQ/hP
T=1000
T=600
T=300
T=100
T=40
T=20
T=10
K=.5
K=.6
K=.7
K=.8
K=.9
K=1
K=2
K=3
K=4
K=5
K=6
K=7
K=8
K=9
K=10

if the values are different from those used in calculating the graph.

As has been indicated, Figure 1 can be adapted to a wide variation in conditions of water input. The only variables which cannot be corrected for directly are the spacing and the effective radius of the wells. A separate graph must be constructed for each special spacing and effective well radius. A limited application can be made of Figure 1 even with a variation in spacing if the advancing water is in the radial encroaching region.

Construction of Water Input Nomograph

Even though this figure is so adaptable, it is a bit cumbersome to use at times. In order to facilitate calculations, the data given in Figure 1 were recalculated and replotted in Figure 2. The method of replotting depends upon the linear relationship between the logarithm of the cumulative volume of water injected and the reciprocal of injection rate (1). The equation is:

$$(8)\quad \log \frac{V}{hF} = 0.00617\ \frac{kPh}{\eta}\ \frac{1}{Q} + \log 0.559\ r_w^2$$

This relationship does not hold beyond the radial encroachment region. In Figure 2 has been plotted $\log \frac{V}{h}$ versus Q/h using the data from Figure 1. A series iso-permeability lines are crossed by a series of iso-time lines. The permeability lines hold for only one permeability and the averaging of several permeabilities may give an approximation which is considerably in error. The magnitude of the error will be some direct function of the heterogeneity of the permeability. The curves are made up of what approximates three straight line regions; namely, radial encroachment, interference, and steady state. The first and last are true stragiht lines. While the reciprocal of the injection rate per foot has been plotted along the x-axis, the figures read directly in barrels per day.

The use of Figure 1 to obtain the 1 millidarcy line in Figure 2 is quite obvious since Figure 1 reads directly for a 1 millidarcy sand. The cumulative volumes and rates for various chosen times are plotted against one another on the logarithm versus reciprocal graph. Certain times such as 10, 20, 40, 100, 300, etc., days are recorded on the line. Since this log V versus 1/Q line is straight over the radial encroachment region, only two points are needed to define it. It is well to put a third point on the graph before drawing the line in order to check on errors. The limit of the straight line is the limit of radial encoachment and the cumulative volume corresponding to this is given by equation (3). This volume limit for radial encroachment should be the same for all the permeabilities since the graph assumes that the fractional gas saturations are constant.

In order to illustrate the transfer from Figure 1 to Figure 2 for other permeabilities, a 0.5 millidarcy effective permeability sand will be calculated. It was pointed out previously that permeability, time, and pressure can substitute directly for one another. If the permeability is cut in half (from 1 to 0.5 md.) the time must also be cut in half. In order to obtain the cumulative volume of water injected and the injection rate into a 0.5 md. sand at 20 days, the volume and rate corresponding to 20 x 0.5 or 10 days is read from Figure 1. This rate is then multiplied by 0.5 to obtain the correct value. In summary, to transfer data from Figure 1 to Figure 2 involving permeabilities other than 1 md., multiply the chosen time by the permeability and read the cumulative volume directly but multiply the indicated injection rate by the permeability in order to obtain the correct value.

The injection rate becomes constant (a line parallel to the volume axis) when the formation has been filled with liquid and this cumulative volume is given by equation (5). The steadied injection rate is obtained by multiplying the steadied rate for 1 md. given in Figure 1 by the appropriate permeability.

The end of radial encroachment is given by the cumulative volume of equation (3) and this represents a point on the diagonal lines. Another point is given on the vertical steadied rate lines by the cumulative volume necessary for fill-up from equation (5). These two points must be connected by a smooth curve to give the behavior of the water injection during the interference region.

The iso-time lines are obtained by connecting the same time values on the lines of different permeability. It will be noted that there is a throw in the time lines which will give the same input rate at a given time for a maximum of three different permeability sands. The reason for this behavior is that highest permeability is in the steadied rate region, the next permeability is in the interference region, and the lowest permeability is in the radial encroachment region. The difference in resistance offered by the three permeabilities is just balanced by the difference in resistance to flow in the three regions.

It will be noted from equation (8) that correction can be made for changes in variables just as in the case of Figure 1. Pressure can substitute directly and viscosity can substitute inversely for permeability. For example, the curves were drawn for 1000 psi sand face pressure. A 2 milidarcy sand under 1000 pounds pressure should give the same V and Q values as a 1 millidarcy sand at 2000 pounds pressure at any given time. In the above two cases, the 2 millidarcy line is used.

The relationship between four variables is given in Figure 2. If two of them are known the other two may be obtained. Just as in the case of Figure 1, the time function is $kPt/\eta F$, the volume function is V/hF, and the rate function is $\eta Q/khP$. Their application in Figure 2 is similar to that in Figure 1. Since there are a series of iso-permeability lines the rate function can be simplified to Q/h if η is assumed to be 1 centipoise and the permeability is taken as a kP product with P in thousands of pounds. Similarly the time function reduces to Pt/F.

Application of Nomograph

There are four chief variables involved in Figure 2 which are related to one another and knowing any two, the other two can be found. These variables are Q, the water injection rate, V, the cumulative volume of water injected, k, the effective permeability of the sand to be flooded, and t, the elapsed time from the initiation of the flood in days. Six combinations of these variables are possible if two are known and the other two are to be found. The application of the nomograph given in Figure 2 will be illustrated by problems representing these six combinations.

Problem 1. A water injection well in a 300 foot 5-spot has an effective radius of 15 feet. The sand face pressure is 2000 psi, the injection rate is four barrels per day per foot of sand and the cumulative volume of water injected is 100 barrels per foot. If the sand has a uniform permeability, what is the average effective permeability of the sand to the flood and how much time has elapsed since the well was turned in? What will be the cumulative volume and injection rate after the flood has been in operation for 300 days? When will oil production start and what will be the rate?

Solution: The indicated K on the graph for Q = 4 and V = 100 is 0.58 md. However the graph was drawn for a base pressure of 1000 psi and the pressure being used is twice as great. A given permeability sand at 1000 pounds flooding pressures behaves like a sand having half that permeability at 2000 pounds flooding pressure. It is therefore necessary to divide the indicated K value of 0.58 by 2 or 0.29 to obtain the correct effective permeability. The indicated elapsed time is 17 days. By following the K = 0.58 line along the graph until it intersects the 300 day time line a Q and V are obtained which are 2 barrels per day per foot and 800 barrels per foot, respectively. Continuing along the K = 0.58 line, until it becomes vertical and the time is found to be about 900 days, this is the time for the initiation of oil production. The rate of oil production which is equal to the steadied rate of water injection will be around 1 barrel per day per foot which is the value of Q when the K = 0.58 line becomes vertical.

Problem 2. A uniform sand on a water flooding project is known to have an average effective permeability of 0.29 md. and it is being flooded at 2000 psi sand face pressure. What will be the total quantity of water injected and the injection rate at the end of 17 days and 300 days of water flooding?

Solution: Keeping in mind the statement in problem 1 concerning the behavior of a sand with respect to the related variables, permeability and pressure, it is necessary to multiply the effective permeability 0.29 by 2 giving 0.58. (This converts the value to behavior at 1000 psi which is the graph pressure.) Using K = .58 and T = 17 on the graph yields a cumulative volume of 100 barrels per foot and a rate of 4 barrels per day per foot. Following the K = 0.58 md. line to higher time values until it intersects the 300 days line, V is found to be 800 barrels per foot and Q is 2 barrels per foot per day.

Problem 3. A sand having an effective permeability of 0.29 md. is being flooded at 2000 psi sand face pressure. What would be the injection rate and the elapsed time when 100 barrels of water have been injected per foot? What would be the rate and time when 1000 barrels have been injected per foot?

Solution: Just as previously the effective

permeability is multiplied by 2 to correct for the pressure. This corrected K value is 0.58 md. The intersection between this and V = 100 gives a time of 17 days and a rate of 4 barrels per day per foot. Following the K = 0.58 md. line to higher time values until it intersects the V = 1000 line, t is found to be about 400 days and Q is about 1.9 barrels per foot per day.

Problem 4. A sand having an effective permeability of 0.29 md. is being flooded at 2000 pounds pressure. At what cumulative volume and at what time will the injection rate be 4 barrels per foot per day?

Solution: The permeability is multiplied by 2 and the intersection of K = 0.58 and Q = 4 gives t = 17 days and V = 100 barrels per foot.

Problem 5. A 2000 pound pressure flood has been in operation for 17 days. The meter at the well head records a cumulative volume of 100 barrels per foot of sand being flooded. What is the effective permeability of the sand and what should the injection rate be at this time?

Solution: At t = 17 and V = 100, Q is equal to 4 barrels per day per foot. The K value at this same point is 0.58. Since the flooding pressure is 2000 psi the 0.58 must be divided by 2 to give the effective permeability or 0.29 md.

Problem 6. The meter on the injection well of a 2000-pound flood failed to register satisfactorily during the first 17 days of the flood and it was not replaced until the 17th day. On this day the water rate was determined and found to be 4 barrels per day per foot. How much water had been injected and what was the effective permeability of the sand?

Solution: At t = 17 and Q = 4, the cumulative volume, V, is 100 barrels per foot. The K value at this same point is 0.58. Correcting this for the pressure by dividing by 2 gives k = 0.29 md.

Application to Heterogeneous Permeabilities

Only uniform permeability sands have been considered up to now. The nomograph can also be applied to a heterogeneous permeability sand but to a somewhat restricted extent. The K values and the time can no longer be calculated from V's and Q's. The breakup in the effective permeability of the sand must be known and Q, V and T can be calculated. The Q and V per foot for a definite permeability bracket can be determined for a given time. These values are multiplied by the footage in the particular bracket which gives the total Q and V in the bracket. Every bracket is given the same treatment for the given time. The Q's and V's of the different brackets are then added to yield the overall Q and V for the whole sand at the particular time chosen. This process is repeated for a series of times to give the Q's and V's over the life of the property. It should be kept in mind that the resulting values are for only one five-spot. If more than one five-spot is involved, the appropriate correction is made.

Change of Nomograph Scale

If the scale of values given on the nomograph is not adequate for a given property which is under study, the scale values may be changed. If the Q and K scales are multiplied and T is divided by a given factor, the range of the nomograph may be changed and its usefulness expanded. For example, the Q and K values may be multiplied by 0.1 and the T values divided by this same figure. The V values remain the same. If the range of scales given by this modificationis not satisfactory, a new nomograph should be drawn. With different spacing or different shooting (an effective radius which is different from 15 feet) a new nomograph must be drawn. It is advantageous to design them so that the average values of a given region are used and therefore a minimum of computing is involved.

Errors

This discussion has dealt with the application of certain simplified and idealized relationships to the study of water inputs. The use of Figure 1 will probably give the most accurate results but its application is a bit cumbersome. Figure 2 gives the maximum of information in a minimum of time. Both should find application in a study of input well behavior if their limitations are kept in mind. The results obtained are probably close approximations of the actual values and should be treated as such. A comparison of the theoretically predicted values with actual field data should expand the usefulness of these graphs and give a more thorough understanding of the phenomenon involved.

Summary

1. A graphical method for predicting the behavior of a water input well in a water flood has been developed based upon certain theoretical equations and involving certain assumptions regarding the flow of the involved fluids.

2. The four variables—effective permeability, time, cumulative volume, and water injection rate—when considered in a uniform permeability sand; any two may be computed by use of the nomograph if the other two are fixed.

3. The graphs may be adapted to a sand having a heterogeneous permeability profile with certain restrictions by taking a summation of the behavior of the different permeability brackets.

4. The nomograph scale may be changed by modifying the variables with appropriate factors. This increases the usefulness and flexibility of the method.

5. Variation in well spacing and shot well radii cannot be corrected or changed in the graphs contained in this report. New graphs must be drawn if such variations occur. However, the graphs can be corrected for the other variables involved in water flooding.

Acknowledgments

The writer wishes to acknowledge the helpful discussions of this work with the staff members of the Division of Petroleum Engineering at The Pennsylvania State College and oil men from the Bradford area. This work was supported in part by the Pennsylvania Grade Crude Oil Association.

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Continuation of End Control Arouses Natural Gas Industry

Despite assurances of the Federal Power Commission that federal control of direct industrial sales of natural gas is not intended, FPC's recent interpretations of the Natural Gas Act, have aroused the natural gas industry.

Most recent action was FPC's denial of the application of Panhandle-Eastern Pipe Line Company to supply natural gas to the Ford Motor Company at Detroit on the ground that the proposed sale would impair service to Panhandle's present customers. The commission "concludes and finds that for Panhandle to use its presently authorized capacity for the purpose here under consideration would be contrary to its representations when it sought authorization for new capacity, violative of existing orders of the Commission, and against the public interest."

The Commission attempted to lull the industry's fears by declaring that it "wishes to make it plain that its action in this matter is not to be construed as an attempt to assert jurisdiction over a direct sale of gas as such. However, we do by our action in this matter indicate clearly, that in our opinion, the Natural Gas Act does confer on the Commission jurisdiction over a company found to be a natural gas company within the meaning of the Natural Gas Act, and over the facilities used by such company in either transporting natural gas in interstate commerce or in the sale of such gas for resale, especially to the extent necessary to enable the Commission to protect the adequacy of service to its customers."

Heretofore Panhandle's "interruptible" customers have been curtailed as operating conditions required. FPC found that sales to Ford would increase such curtailment of deliveries to industrial consumers; so the order appears to establish a priority for present industrial consumers, but leaves unanswered the question arising if Panhandle should discontinue "interruptible" service altogether, in favor of Ford.

The policy enunciated in the FPC ruling is so broad that, in the opinion of gas industry leaders, only the future and specific cases will reveal the extent and manner of its application.

Second Case of Sale Denial

The Panhandle Eastern is the second case in which the FPC denied application for sale. Northern Natural Gas Company's application to supply boiler fuel gas to the Iowa Electric Light and Power Company was rejected on the grounds that coal was available.

According to Wesley E. Disney, counsel for the Independent Natural Gas Association of America, whose petition for a rehearing of the case was granted by the commission, the doctrine of "end use" control was applied as a factor in denying the certificate of convenience and necessity of Northern Natural, although he avers the Natural Gas Act gives the commission no jurisdiction to withhold a certificate on such ground.

INGAA also is preparing brief, amicus curiae, in the case of Interstate Natural Gas Company vs. Federal Power Commission et al, pending in the U. S. Circuit Court of Appeals, Fifth District, New Orleans.

Completions Ahead of 1945 Rate

WELL completions in the United States during the first three months of 1946 are well ahead of those completed during the first quarter of last year. A continuance of this trend would result in over 10 percent more completions in 1946 than in last year, and would fail to substantiate the slightly less drilling intentions indicated by the industry at the beginning of the year. Figures compiled on the number of active rigs at the end of March show a moderate decrease from those reported a month ago and also from those working at the end of March a year ago.

During the four weeks ended March 30 there were 2029 wells completed in the U. S., a weekly average of 507 wells, which topped the 487 weekly average of the preceding month and is considerably higher than the 450 average of March, 1945.

In the first three months of 1946 there were 6355 well completions of all classes, an average of 489 per week, an increase of 12.5 percent over the 434 averaged during the same period of 1945. Responsibility for this increase was widespread, as almost all states reported increases. The leaders in this gain were Texas, Oklahoma, Louisiana, Illinois, Kansas and Pennsylvania. Texas was up 13.9 percent over last year, with over half its districts showing considerable increases. A large increase in the northern district of Louisiana offset a small drop in the south to give the state a 36.9 percent rise over the same period of 1945. Illinois was up 13.4 percent, while Kansas and Pennsylvania increased 48.1 and 6.8 percent, respectively. The states reporting declines in completions as compared with the first quarter of 1945 included California with a drop of 9.7 percent, Mississippi down 48.9 percent, and New Mexico with a decrease of 19.4.

At the end of March there were 3680 rigs drilling or rigging up preparatory to drilling, a decrease from the 3710 active rigs reported at the end of February and the 3897 rigs on March 31 of last year. The states showing the largest decreases in active rigs as compared to last year were Texas, Oklahoma and Louisiana. Texas, reflecting large drops in its Panhandle, West and Southwest districts, decreased from 1244 active rigs at the end of March of last year to the current figure of 940. Oklahoma reported 437 rigs active compared to 483 a year ago, and Louisiana was down from 190 a year ago to 164.

Well Completions in the United States During March, 1946, and Cumulative for Year

(Figures compiled from weekly reports of editorial men, with following exceptions: Illinois from Illinois Geological Survey; Indiana from Indiana Division of Geology, except for March; Missouri from Missouri Geological Survey; Bradford and Kane-Clarendon, Pennsylvania, from The Producer's Monthly; Tennessee from Tennessee Division of Geology)

State or District	MONTHLY COMPLETIONS: March, 1946 — Details for March, 1946 — New Wells *Oil	Gas	Dry	Others[6]	Old Wells Deepened	Total Completions Mar., 1946[1]	Feb., 1946[3]	Mar., 1945[2]	Total Footage March, 1946	CUMULATIVE COMPLETIONS: First Three Months — Details, Jan.-Mar., 1946 — New Wells *Oil	Gas	Dry	Others[6]	Old Wells Deepened	Total Completions Jan.-Mar., 1946[4]	Jan.-Mar., 1945[5]	Percent Change	Total Footage, 3 Months 1946	RIGS IN OPERATION — Details for March, 31, 1946 Drilling	Rigs Up	Shut Down	Total Drilling and Rigs Up Mar., 31, 1946	Feb., 28, 1946	Mar., 31, 1945
Alabama			2			2		1	2,855	1		4			5	4	+ 25.0	20,077	4		1	4	3	7
Arizona																1				1		1		
Arkansas	4		3		1	8	16	6	26,520	20	1	17		1	39	28	+ 39.3	146,295	27	1	2	28	22	29
California	122	1	26		2	151	111	172	680,394	357	9	78		14	458	507	— 9.7	1,960,359	220	40	38	260	265	276
Colorado	7					7	7		45,135	21		3			24	7	+242.9	154,545	50	6	11	56	49	20
Florida			1			1	1	3	4,506			5			5	4	+ 25.0	36,884	8			8	6	4
Georgia			1			1			5,008			1			1	2	— 50.0	5,008			1		1	2
Illinois	97		60		3	160	137	98	388,982	280	1	161	1	7	450	397	+ 13.4	1,084,598	218	26	12	244	235	133
Indiana	17		7			24	19	19	45,367	45	2	22		1	70	67	+ 4.5	133,070	55	14	8	69	65	21
Iowa																1								1
Kansas	92	18	36	1	10	157	153	135	486,580	287	62	145	2	18	514	347	+ 48.1	1,638,087	223	14	8	237	253	242
Kentucky	13	8	17			38	37	22	70,927	57	22	46		1	126	119	+ 5.9	233,161	43	11	6	54	54	16
Louisiana	47	14	42			103	90	62	705,436	188	23	92		1	304	222	+ 36.9	2,095,410	156	8	14	164	194	190
North	24	13	15			52	42	11	251,830	86	21	46		1	154	67	+129.9	749,302	70	8	9	78	89	64
South	23	1	27			51	48	51	453,606	102	2	46			150	155	— 3.2	1,346,108	86		5	86	105	126
Michigan	15	3	22			40	65	40	107,374	65	14	85			164	160	+ 2.5	407,787	79	11	36	90	94	99
Mississippi	9	1	10		1	21	12	32	147,807	32	3	20		1	56	90	— 48.9	394,406	30	1	3	31	34	64
Missouri	1					1	2	2	275	2	1	1			4	10	— 60.0	2,525	4		5	4	2	8
Montana	4		5	1	1	11	15	17	19,541	34	1	14	3	2	54	49	+ 10.2	117,443	53	6	12	59	55	52
Nebraska								1								2			2		2	2	3	1
New Mexico	19	3	11			33	28	38	110,144	64	7	28		1	100	124	— 19.4	360,916	63	2	13	65	74	91
New York	50	1		28		79	71	76	108,596	141	4	1	79		225	201	+ 11.9	318,683	71	9	23	80	72	73
Ohio	22	38	33			93	79	55	232,811	56	125	86			267	176	+ 51.7	674,846	168	24	42	192	184	170
Oklahoma	103	12	67	4	8	194	200	168	652,366	359	53	202	7	22	643	552	+ 16.5	2,302,484	411	26	11	437	422	483
Pennsylvania	105	13	4	113	1	236	235	235	399,519	308	44	18	333	3	706	661	+ 6.8	1,204,129	242	24	59	266	239	262
South Dakota																			3	2	2	5	5	
Tennessee												1			1			706	3		1	3	3	
Texas	353	26	207	4	8	598	612	548	2,514,180	1,143	119	623	9	36	1,930	1,694	+ 13.9	8,326,450	885	55	134	940	977	1,244
E. Tex. Bor.		12	1			13	11	11	87,348	3	39	2			44	20	+120.0	286,889	28	1	1	29	31	30
Rest of E. Tex.	34	1	14			49	36	12	248,793	83	5	36	1	1	126	47	+168.1	690,424	51	6	16	57	64	52
North Texas	91		81	2	2	176	157	101	460,255	302	1	228	5	7	543	376	+ 44.4	1,449,909	140	10	24	150	165	162
West Central	18	1	23	1	1	44	38	32	108,249	60	10	78	1	3	152	89	+ 70.8	412,258	72	2	47	74	75	89
West Texas	102	1	22	1	2	128	138	145	600,566	320	5	72	1	9	407	456	— 10.7	1,921,238	314	12	24	326	326	473
Panhandle	10	9	6		3	28	42	49	71,969	43	40	18		13	114	145	— 21.4	308,829	49	5	5	54	67	133
Upper Coast	31		22			53	63	63	382,739	103	2	66			171	171		1,233,298	67	3	2	70	90	96
Lower Coast	52	1	9			62	86	85	409,678	179	8	63		2	252	249	+ 1.2	1,629,657	105	11	6	116	103	125
Southwest	11	1	19			31	31	39	105,505	40	9	38	1	1	89	120	— 25.8	289,637	33	4	4	37	29	66
S. Central	4		10			14	10	11	39,078	10		22			32	21	+ 52.4	104,311	26	1	5	27	27	18
Utah																			4	2	2	6	6	
West Virginia	5	45	5		3	58	43	62	154,370	22	114	30		5	171	185	— 7.6	461,172	276	48	65	324	329	345
Wyoming	9	1	3			13	13	10	55,794	28	2	8			38	38		164,031	44	7	21	51	64	64
Total U. S.	1,094	184	562	151	38	2,029	1,946	1,8 2	6,964,487	3,510	607	1,691	434	113	6,355	5,647	+ 12.5	22,243,072	3,342	338	532	3,680	3,710	3,897

* Includes distillate wells. [1] Wells completed in 4 weeks, or 28 days, ended March 30, 1946. [2] Wells completed in 4 weeks, or 28 days, ended March 31, 1945. [3] Wells completed in 4 weeks, or 28 days, ended March 2, 1946. [4] Wells completed in 13 weeks, or 91 days, ended March 30, 1946. [5] Wells completed in 13 weeks, or 91 days, ended March 31, 1945. [6] Water input, gas injection, and salt water disposal wells.

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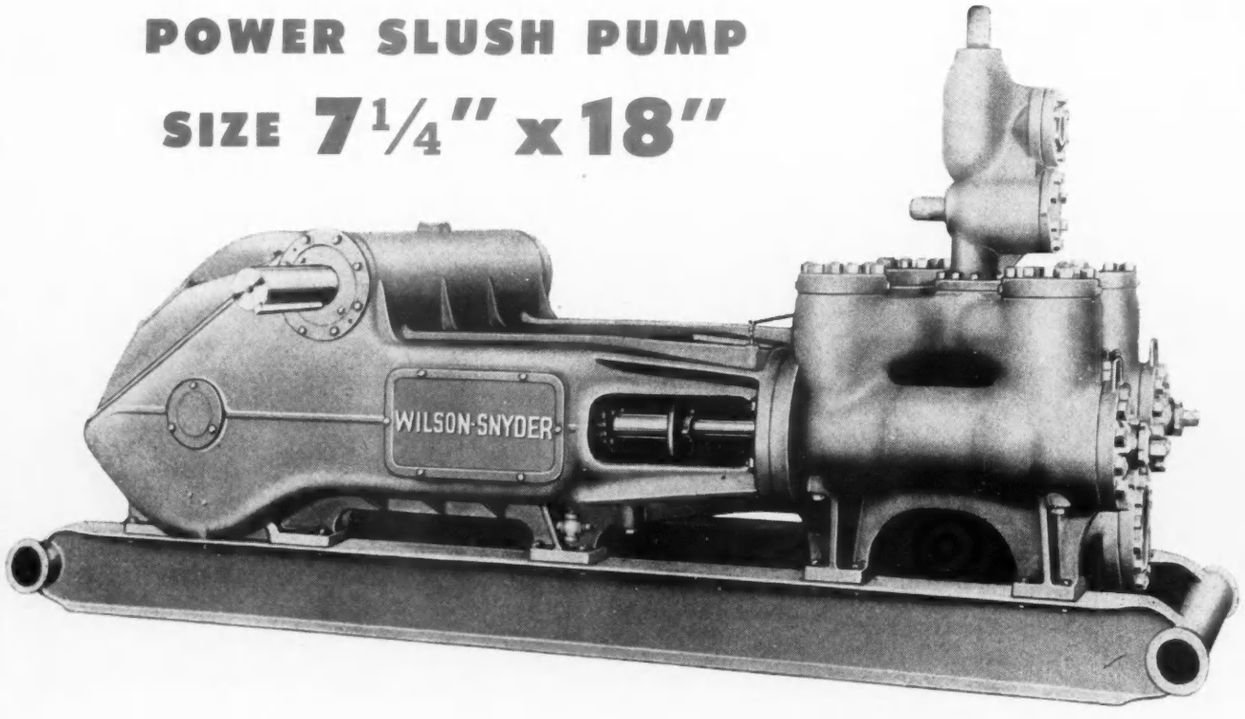

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Simplified Drum-Lifting Cradle Is Operated by One Man

By GILBERT M. WILSON, Staff Writer

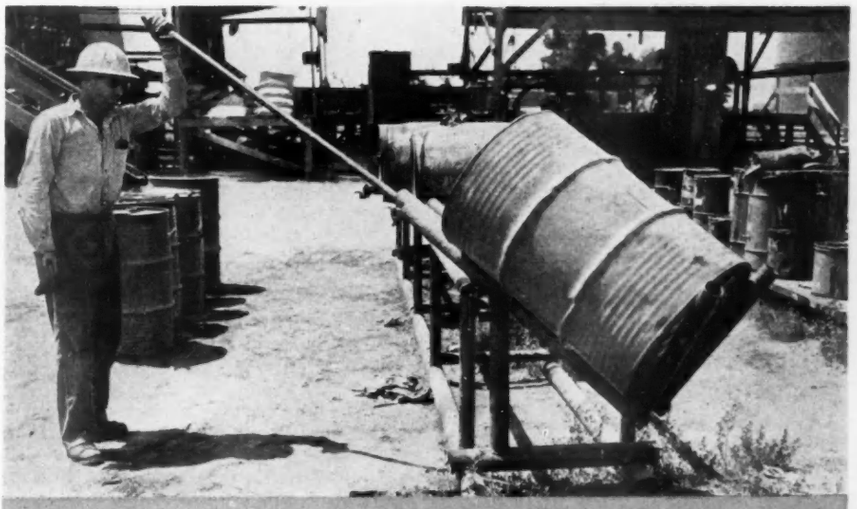
WHILE there probably are as many drum-lifting devices as there are drilling rigs, few are as easily handled and easily constructed as the one-man device designed by the drilling superintendent of a large drilling company. This particular installation consists of a conventional parallel bar type of rack mounted on skids, but which differs from others in that it has mounted at one end a device which enables one man to lift the barrel from the ground up to rack level and in the process, turn the drum over on its side to permit its being rolled directly onto the rack. Both design and construction are simple, and the device may be built up in any welding shop, the materials needed being only scrap two- and 3-inch pipe.

Lifting Cradle

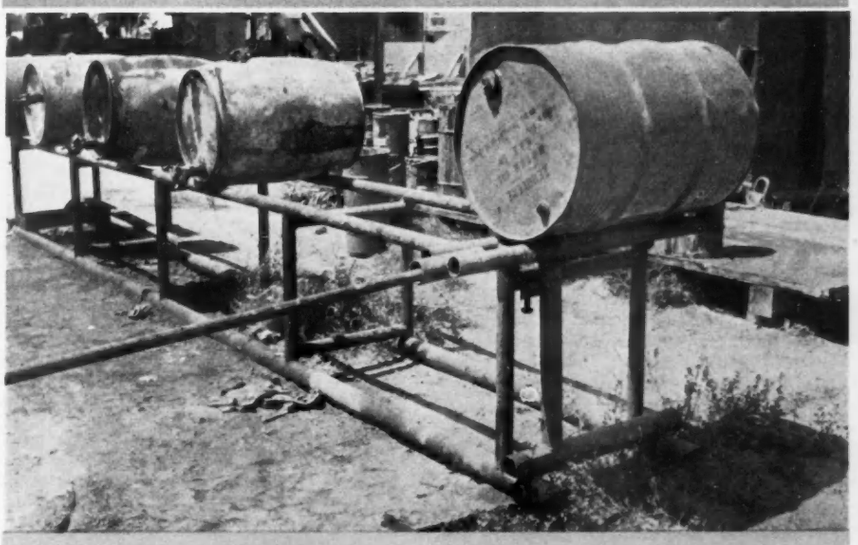
The lifting cradle consists of two 4-foot lengths of two-inch pipe laid parallel and some six inches apart, and to which, at one end, is welded a corresponding pair of spraddled feet extending out at right angles some 24 inches, with the outer ends about 18 inches apart. This assembly, when stood up as illustrated, then is hinged to a fitting welded to the end of the rack. The hinge consists merely of three short nipples of one-inch pipe, one welded to a fitting attached to the end of the rack, the other two welded to the back side of the barrel cradle. When these three pieces are placed together and a ¾ by eight-inch bolt thrust into the matching sections, it forms a sturdy hinge which operates in a vertical plane. That part of the main rack to which is welded the single section of the hinge is set in a socket atop a vertical length of three-inch pipe, the latter securely welded to the rack. It is this latter portion of the hinge which provides the horizontal motion to the lifting cradle. Leverage for lifting a full drum of fluid is obtained by inserting the end of an eight-foot length of light pipe into a three-inch nipple welded between and forming a part of the upper end of the lifting device.

Device in Operation

Normally, the cradle device rests in a vertical position, with its two feet lying flat on the ground. In operation, the drum is rolled onto the feet and lodged securely against the vertical twin two-inch pipe back members. Using the snipe, the man pulls downward on the lever, lifting the drum up to rack level and at the same time swinging it in horizontally until it can be rolled directly onto the rack proper. Once in this position, the cradle can be lodged atop the parallel bars of the rack and the man can then dislodge the drum and roll it along the rack as desired. Full or partially emptied drums that must be taken down when moving to another location likewise are as easily handled.



View showing spraddle legs onto which drum is rolled prior to lifting it off the ground with aid of the long snipe.



Following lifting and swinging of the drum to rack level, the cradle may be rested on the end of the rack, permitting the man to roll it over onto the rack.

The rack itself is of conventional size, measuring about 24 inches wide, 30 inches high and 25 feet long. When transported to another location, the cradle device may be quickly removed and carried separately if desired, although it is sturdy enough to withstand considerable rough handling. The simplicity of construction, small amount of material required, and saving of time realized through ability of only one man to handle heavy drums are factors that make it unusually advantageous for contractors searching for any means that will help to curtail expenses. With little expense, any existing rack of this general type can be fitted with a lifting cradle designed along the lines of the one described.

Effective Management Organization

Part 1

By G. M. FITZGERALD

Card, Fitzgerald & Leghorn, Management Consultants, Engineers

TOP management of any business now faces problems for which no precedent has been established. Today it is essential that management of any kind and size of business use and understand the management tools which give them effective control over all the functions of their business. With this thought in mind an important and fundamental phase of management control must be reviewed.

This article is not concerned with text book theory, but is presented in a practical way for actual use and application to present-day business. The organization of the necessary functions of the business is the first fundamental responsibility of the top executive. It is unfortunate that this idea has not always been recognized. Many a concern with a good product and market, with ample finances, good methods and sales organization, are still weak because they lack the essential internal cooperation. Such situations encourage executives to a scientific approach to their business problems. The set-up of a new business organization is always an easier task than the study, realignment and reestablishing of an old organization. Every management structure must be reviewed with full knowledge of its objectives and methods. Before top management can definitely establish its objectives and have assurance that they will be met, it must:

1. Develop and install a sound plan of organization structure.
2. Fit the right man to the job.
3. Develop and install a means of measuring performance.

First Step

The first step in developing any plan of organization is to get the present plan on paper in the form of charts for the entire concern. The procedure of charting the organization in itself is a test of the soundness of its structure. Any divisional or departmental relationship which cannot readily and clearly be shown on the chart, is usually confusing and misunderstood by both employes and management.

Where no previous chart exists for the key management functions it was discovered in every case that misunderstandings on functions between department heads existed. Also, some functions were being duplicated by several departments. The organization once charted can be impartially and objectively analyzed. A most common and serious error in building an organization is the assumption that a chart can be drawn and a man placed into each predetermined spot to fit the pattern. A common-sense maxim is to delegate to an individual only those functions that may be performed within the limits of his capabilities.

This presents one of the most delicate situations encountered in building an effective organization, and it is probably this point that has discouraged executives and caused postponement of many attempts to place a business on a more realistic operating basis. The only fair procedure for transposing an organization chart into a realistic and dynamic organization is to personally talk with each key individual and through common discussion, determine the overall specifications of the position. Such an approach takes time, patience and impartial thinking, and should be done by someone who has no personal axe to grind, and whose thinking is geared to developing the best overall plan for the company as a whole.

Top officials all too frequently cease organization planning with the preparation of the charts. Organization charts, to become an effective instrument, must always be supplemented in writing with the outline of actual duties to be performed in each position. It should be recognized and will be quickly discovered that such specifications cannot be hastily or carelessly written. These write-the specifications will have a wide use in a modern business if they properly cover functions, responsibilities, objectives and controls in each position. Most progressive organizations have already carefully analyzed and described the job requirements of all their hourly and clerical positions. Thus it is not uncommon to enter an organization and find that a relative minor manual job is described in considerable detail as to its various requirements and responsibilities. On the other hand, you will find in the same company that a highly responsible position directing the effort of a large department is not defined, nor do any written specifications exist describing the limits of the executive's authorization or the scope of his operating activities. Occasionally, an executive is found who feels it is impractical to limit his functions in the company to a written description. In such cases, it is pointed out that there is no attempt in any way to limit his functions. Rather, the description will clarify his responsibility in the light of the entire organization.

There is nothing more important about an organization than its future, and its future rests with its management. The practical problems in realigning or streamlining or or organization must be faced. While very pretty charts can be drawn, unless the responsibilities are correctly delegated on a realistic basis and not a theoretical basis, little will be accomplished. Each organization feels that its particular personnel and personal problems are unusual, as they probably are. However, most of them do fall into categories that are quite common in the business world.

Take, for instance, the problem of the loyal, sincere employe. He has risen with the company and holds a responsible position. But he has failed to keep up with the latest improvements in procedures and methods. His thinking is not geared for the coming competitive clashes. Time and again such a situation has been answered by giving such a department head a bright, promising assistant. It is rare that such a plan has succeeded, for a conflict shortly arises that usually ends in even more trouble. Another alternative is to remove certain duties of the weak department head to another department. This invariably opens the organization to duplication and misunderstanding. Successful remedies to such situations have been found. Occasionally, the situation is solved by nothing more than an honest, straightforward talk. When a man is given the facts and the company's position, he may often make great improvement. Another possibility may be in creating a better position in which to "promote" the individual to an advisory spot where his valuable knowledge of the company's past operations and his conservative foresight can be of benefit, but he cannot directly dictate operating policies. Again conditions may be such that the employe can be retired on a liberal pension, at a savings to the company.

"Duty" Promotions

There is another common stumbling block in the way of revamping an organization. Suppose a new position is to be filled or a promotion must be made. Very often there is a man who has been in line for such a change for several years. Unfortunately, he is not truly qualified to assume increased responsibility. To go ahead and promote such a man because it is felt there is an obligation to him, is most unfair to both the particular individual and the company. It is here that such a situation should be faced squarely before a change is made and a costly readjustment becomes necessary at a later period.

These examples are mentioned to emphasize the fact that a sound plan or organization must be made upon impartial and objective thinking. Unless such an attitude be taken at the beginning of the organizational study, there is little point in making the study. However, it should be realized and strongly recommended that changes are not to be made all at once and throw the organization into complete disruption; rather, the plan should be drawn out to cover the necessary period of time until gradually the ultimate plan has been achieved. It appears that considerable change is necessary. It may be wise to develop, perhaps, a three-year plan. Such a plan would outline in three

stages the steps to be taken to reach the desired goal. In this way relatively minor changes can be made each year, but at a minimum of confusion or personal difficulty.

To understand principles underlying organizational study, a review of organization structure should be made. The first step in any organizational study must naturally begin with the top management. Top management consists of three definite levels with each having their particular functions in the overall picture.

At the top of the organization is the board of directors headed by the chairman of the board, and whose members exercise the ownership functions of the business responsible only to the stockholders.

The second level consists of the executive management and is composed of the top operating executives who devote full time to policy-making and directing overall business of the company fulfilling the directive function.

The third group is composed of the departmental heads reporting to these respective executives, and fulfills the administration function. This group has considerable responsibility and authority in administering poilcies and plans set by the executives.

It is in these three groups that a searching analysis is most needed when an organizational study is made. Although it is seldom obvious, it is between the three functions that the common fault of overlapping duties and misunderstood functions will be revealed.

Organization begins when a single job becomes too great for one man. He may divide his job by assigning certain duties to a subordinate. He maintains his control over the work by holding the subordinate responsible for his delegated duties within defined bounds. This is the principle of line organization which is very old. Napoleon once wrote: "Nothing is so important in war as an individual command; for this reason when war is carried on against a single power, there should be only one army, acting upon one base, and conducted by one chief." Soundness of that observation was conclusively proven during the past war, through the principles of the supreme commanders, exemplified by General Eisenhower and General MacArthur.

Line Executives

The line executive, department head, or foreman is a man whose initial function is to direct and make decisions. These men have the ability to get things done and should be chosen accordingly. Such men, given the responsibility of making decisions, must understand the importance of acting on the basis of facts. Generally speaking, it is too much to ask one man to both gather and assimilate all pertinent facts and then make decisions based on those facts. Frederick W. Taylor years ago realized this situation in the case of foremen. He pointed out that one man cannot plan his work, supervise quality, keep track of cost, hire, discipline, instruct and do the many other duties required of a foreman and perform all his functions well.

Staff functions were created for the purpose of supplying the line executives with the facts and figures required to take intelligent action. To follow the example given above, the modern foreman has available a planning group that supplies him with all production data necessary to intelligently run his job, an inspection department to provide impartial inspection geared to a company quality policy, a cost accountant to assimilate cost data and return to him cost reports on which he may take action, a personnel manager that assists him in hiring, disciplining and suspending employes. The mistake of allowing staff functions to initiate direct action has been realized in some companies where the foremen have been stripped of all directive actions and the staff functions allowed to directly perform line duties. Where this has happened the foreman has ceased to become a member of management and in some cases has joined unions, placing the company in a difficult position. Staff functions, while important and necessary, must be kept within their described bounds.

During the war, in many expanded war plants, there were cases where the staff functions were built up to the point where they were out of proportion to the ability of the line organization to absorb or use the results of their work. Consequently, staff functions were sometimes misconstrued to mean nonessential organizational window trimming. Some companies who do not feel they need or can afford staff functions may often find they are already paying more for the same work a specialized staff man would do, although they are not getting the benefit of impartial fact-finding.

In the modern organization, the executive management and department heads may perform both line and staff functions; such flexibility is to be deserved. The relationship of line and staff functions may be illustrated by a simple example: a foreman feels the need for an additional truck in his department. He makes a request of the superintendent, his line supervisor. Acquainted with the conditions, the superitnendent feels the request is justified, passes the request on to the general manager. The general manager, not intimately acquainted with department work and charged with the responsibility of spending the company's money wisely, asks the tool engineer to check the necessity of the truck and see if any other method of material handling may do the job. He asks the purchasing agent to investigate the various types of trucks, their advantages, disadvantages and costs. He asks the cost agent to check the cost savings that may be accomplished in purchasing a truck. Each of these departments, acting in a functional capacity to the general manager, will present him with the results of this fact-finding The general manager will weigh the facts, then talk with the superintendent to assure practical application of the findings and then make a decision to order a truck or to reject the request. Thus, the staff functions have presented advice, but it is the line executive who assumes responsibility for the decision. It is interesting to note that the general manager may also act in a functional capacity to the sales manager in applying facts upon which the sales manager may make decisions in formulating a sales program.

Committee Organization

Management direction through a committee organization is still somewhat new and generally misunderstood. In companies where the committee plan has been developed, such as the McCormick "Multiple Management" Plan, they have proven highly successful and well worth all the effort spent in building them. There is in most companies a definite position in the management structure for carefully designed committees. The most important single point in governing committee actions is that the committee must act in an advisory capacity to the responsible executive, and never in a direct capacity. Unless duties, relationship and members of the committee are carefully defined, there is apt to be misunderstanding as to its use.

It will be noted that no attempt has been made in this article to set forth the ideal type of organization. No attempt has been made to present any fixed pattern as to who should answer to whom and what functions should be performed by the various departments. The formal organization charts set forth in most management text books can often be abandoned advantageously. Too much depends upon the particular nature of the business and of the men who will direct the business. As an example, there may be found a wide variance among students of management as to which officer of the company is responsible for the industrial relations activities. Westinghouse, for example, has the director of industrial relations answer directly to the chief executive, where on the other hand, the Columbia Broadcasting Company has the same position answering to the treasurer of the company. This may be considered an odd arrangement, but it works successfully.

More important than who performs a given function is that the performance of the function is the definite responsibility of one individual. This must be clearly understood by the rest of the organization, and the scope and responsibilities of the function placed in writing. A very sound principle of organization is that responsibility and authority be proportionately balanced. At the same time every man given responsibility and authority should be equally accountable for the results.

Top management must always be ready to change the organization chart to meet the changing needs of business. New laws, labor trouble, new products, and changing customer demands may often require a change in the management team. It is a wise management that can keep the team on its toes, pulling out one player and substituting another when the trend of the game requires a new specialized skill.

An alert, efficient management is difficult to achieve under the best of circumstances. Every organization is bound by this past precedent, its local problems, and its questions concerning its future. Any organizational study must take an impartial attitude in considering all such phases before arriving at decisions. An open minded attitude by the top management with an earnest desire toward an efficient operating team will make any company stand out above its competitors.

(This is the first of five articles. The second will appear next week.)

Radioactivity Experiments Aim at Finding New Reserves

Science Attempting To Crack Nature's Oil-Making Secret

Experiments which hold promise of fabulous additions to the world's known oil supply through radioactivity were reported to the Organic Division of the American Chemical Society.

Utilizing atomic-age techniques, a group of Massachusetts Institute of Technology scientists are developing the hypothesis that oil is formed by the radioactive transformation of familiar organic substances.

Identification of radioactivity as the explosive force which accomplishes this cosmic metamorphosis would inaugurate a technical revolution, enabling science to ferret out vast deposits of oil that cannot be detected by present methods.

Conversion Experiment

The M. I. T. investigation, reported by Irving A. Breger, Dr. Charles W. Sheppard and Miss Virginia Burton, are duplicating in the laboratory the radioactive process which may explain how nature, over a period of 10 million to 100 million years, accomplishes the conversion of protoplasm, proteins, fats and other complex materials into oil.

The research, sponsored by The American Petroleum Institute, has shown that by bombardment in a cyclotron fatty acids isolated from ocean-bottom mud can be turned into hydrocarbons of the type making up the bulk of the world's petroleum resources. Radon, a gas formed when radium spontaneously disintegrates, was used as the source of the alpha particles with which the fatty acids were bombarded.

"Many attempts have been made to explain the manner in which petroleum is formed in the earth," the report said. "Early research indicated that most petroleum originates in the remains of plants and animals which have been deposited on the ocean bottom and which have then been buried by layers of mud or sand. High temperatures and pressures were originally thought to contribute the energy required to convert this material into oil. Investigations about ten years ago proved, however, that oil is formed at temperatures too low to permit this conversion.

"Recently, it has been proposed that bacterial action or the energy from the high-speed particles released by radioactivity may play an important role in converting protoplasm, proteins, fats, and other complex substances into the constituents of crude oils. Research by the Geology Department at M. I. T. has shown that there may be sufficient radioactivity in the materials of oil fields to effect this conversion over a period of 10 million to 100 million years.

"Among the compounds isolated from ocean bottom muds have been a number of fatty acids, so named because they can be obtained by chemical treatment of fats. When certain of these acids were exposed to bombardment by alpha particles from radioactive disintegration in the laboratory, they were converted into straight chain hydrocarbons which make up the greatest proportion of naturally occurring petroleums.

Ring Compounds

"This research, begun three years ago under sponsorship of The American Petroleum Institute, has been continued by investigating the possibility of producing by the same means cyclic hydrocarbons from naturally occurring cyclic acids associated with petroleum. Both the straight chain and cyclic hydrocarbons are made up of carbon atoms joined to one another, but in the case of the cyclic compounds the ends of the chain are joined to form a ring. These ring compounds are found in almost all petroleums.

"The material chosen for study in this work was an acid, previously identified in Russian and Californian crudes, having a ring structure made up of six carbon atoms. Although the origin of this type of acid is unknown, it may be a product of bacterial or radioactive action on sterols, complex compounds which occur universally in plants and animals.

"Radon, a gas formed when radium spontaneously disintegrates, was used as the source of alpha particles for the bombardment of the fatty acids. Owing to the small amounts of radon available, it was possible to obtain only extremely small quantities of conversion products, thus making final identification very difficult.

"In order to increase the yield of conversion products experiments were carried out with the large, controlled source of fast particles in the M. I. T. cyclotron. Comparison showed that the gas evolved when the cyclic acid used in this work was bombarded by alpha particles from radon or by deuterons in the cyclotron had nearly the same analysis. This research, therefore, indicated that the high speed deuterons produced in the cyclotron have the same chemical effect as the natural alpha particles from the radioactive element radon.

"After other investigations and physical calculations had confirmed this conclusion, it was decided to run further bombardments of the acid in the cyclotron. As a result of such irradiation the acid group was found to be removed from the cyclic portion of the molecule, thus producing a mixture of cyclic hydrocarbons, one of which is widely distributed in fairly large quantities in petroleum. It was conclusively shown that bombardment will not cause these rings to open up to form straight chain hydrocarbons.

"The research has, therefore, shown that not only straight chain but even cyclic hydrocarbons can be produced by the effects of radioactivity. Work is now in progress to determine the manner in which complex organic substances are transformed by means of radioactivity.

"These changes in organic compounds have been brought about by bombardment or radiation under laboratory conditions. Whether similar conversions may take place in the organic material present in oil fields to form appreciable quantities of petroleum is as yet unknown. The radioactivity of earth materials is now being measured and in time, as this study progresses, some definite idea will be obtained as to the quantitative importance of radioactivity in the formation of crude oil."

Stanolind Moving Central Offices to Oklahoma City

Central division offices of Stanolind Oil & Gas Company will be moved from Tulsa to Oklahoma City, effective June 1, E. F. Bullard, Stanolind president, has announced. The division office has been housed with the main headquarters office in the Stanolind Building in Tulsa and the move is being made because of the company's need for additional office space which is available in Oklahoma City and not in Tulsa.

Stanolind's central division covers producing and exploration operations in Oklahoma, Kansas, Arkansas, Louisiana, Mississippi, Illinois, Indiana and Florida. T. L. Regan is division production superintendent and H. H. Kister is the division manager.

A manufacturing and natural gas division was established by the company in January and housed with the main offices in Tulsa. The expansion of this office has necessitated the movement of the central division office. Establishment of the new division will eventually employ as many persons as are being transferred to Oklahoma City.

The central division will occupy two floors in the First National Bank Building in Oklahoma City. The Oklahoma district office of the central division has been maintained in the same building in Oklahoma City for a number of years.

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* Registered United States Patent Office

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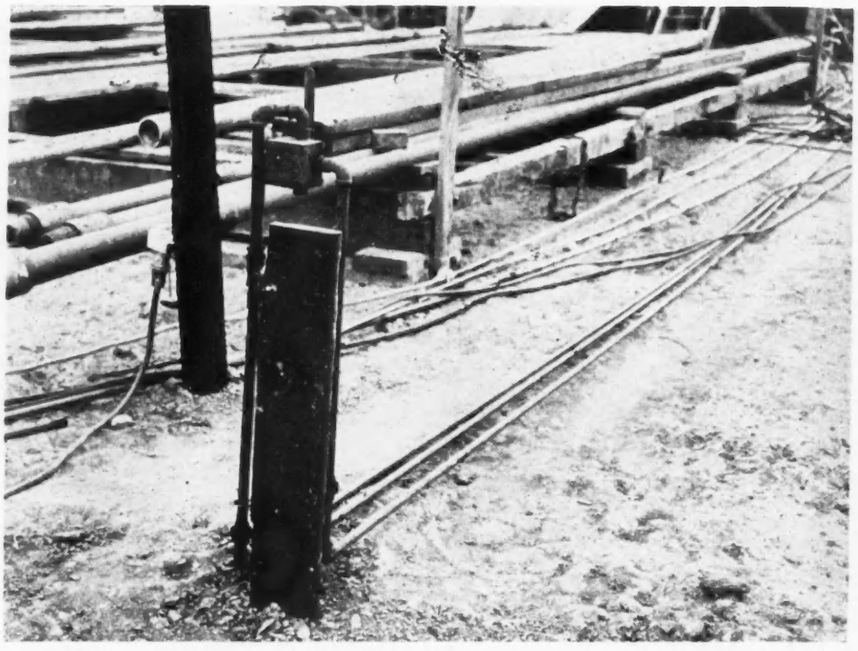
Remote Blow Out Control Permits Preventer Ram Operation from Safe Distance

In a field where danger of blow outs exists in a high-pressure sand encountered on the way down to the oil producing zone, one company takes the precaution of installing an emergency set of hydraulic controls which operate the blow out preventer rams. Paralleling the centralized controls located on the rig floor, this more distant station is available when and if the men have to vacate the rig suddenly without being able to get over to the controls beside the drawworks. The station consists only of a length of 2x12 timber set in the ground and on the side of which the controls are mounted.

BLOW OUT CONTROL

The slight amount of extra piping and fittings necessary for this secondary control is extremely cheap insurance for drilling under hazardous conditions, and is especially so to operators in this particular area where a costly blow out already has occurred within the past year.

As additional protection to the pressure lines between panel and preventer setup the pipes may be buried, or threaded through a section of heavier, scrap pipe so as to insure against possible pipe failure at the time when emergency demands the use of the safety feature.



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See Pages 2450 to 2455 Composite Catalog

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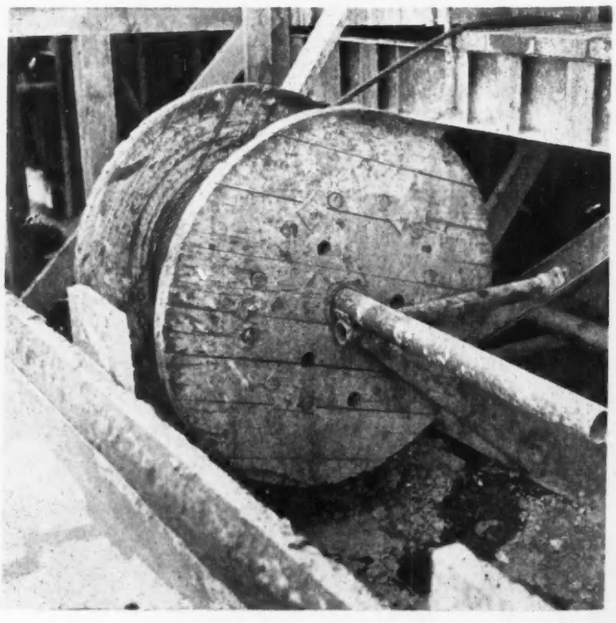
Spare Wire Line Supported on Substructure Brackets

A convenient, time-saving method of handling the spool of extra rotary drilling line utilized by one drilling contractor consists of mounting it on a pair of brackets bolted to the side of the rig structure as shown. Turning on a 2½-inch pipe axle, the spool is swung at near floor level on a cradle-like support made of 2-inch pipe material. Taking up little if any vital rig space, the spool is always accessible for quickly unreeling cable when needed. When cable is to be wound up, the spool is easily turned by one or two men standing on the ground beside it. Mounted in the open on the roadway or yard side of the rig, the spool may be hoisted easily in or out of its cradle. The new, full reel can be handled onto the supports with the derrick line, by the shear legs and winch line of the truck which brings in the replacement reel, or may be rolled on across a pair of elevated timbers, and lowered to the semicircular supports with paired jacks under the extended pipe axle.

WIRE LINE HANDLING

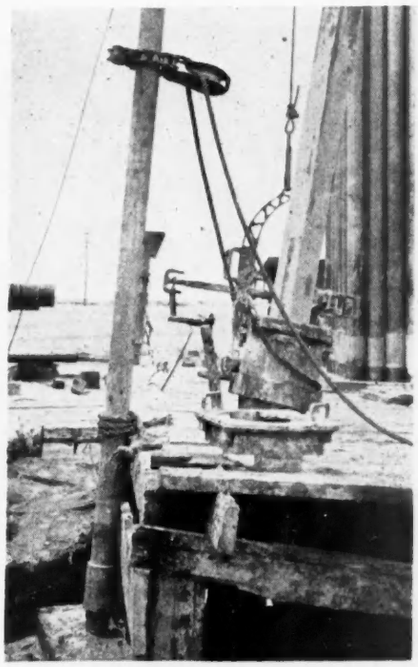
A reel mounted on brackets such as those shown may be provided with a protector or shield which, overlapping the derrick floor, prevents falling objects or floor dirt from reaching and possibly damaging the line still coiled on the reel.

This additional protection will extend the life of the lubricant in the line and thus prevent premature aging and early failure when it is finally placed in service.



DRILLING HINTS

Short Chain Section Mounts Back-Up Post Block



PIPE RACKING

The practice of using a small block tied to a spare joint of drill pipe as a back-up post for numerous jobs about the rig floor is not uncommon, particularly on light portable rigs where the amount of permanently mounted equipment is kept to a minimum. To improve the efficiency of this practice, one drilling contractor rigs up a snatch block with the aid of a short length of rotary chain.

The chain provides a greater bearing surface with correspondingly increased "bite" into the pipe when the single bolt tying the ends together is cinched down tightly. A second, and perhaps principal advantage lies in the ability of the chain to hold the block in a rigid horizontal position as shown. Contrasted with common installations where the block hangs downward suspended by a wire or rope, this installation holds the back-up rope in a convenient, accessible position and eliminates possibility of its becoming fouled or jammed between pulley sheave and its housing.

With this chain-type mounting, installation is a matter of but a few seconds. The block can be readjusted up or down and made to "look" in any direction merely by loosening the single bolt.

Dual Rathole System Protects Slim Kelly

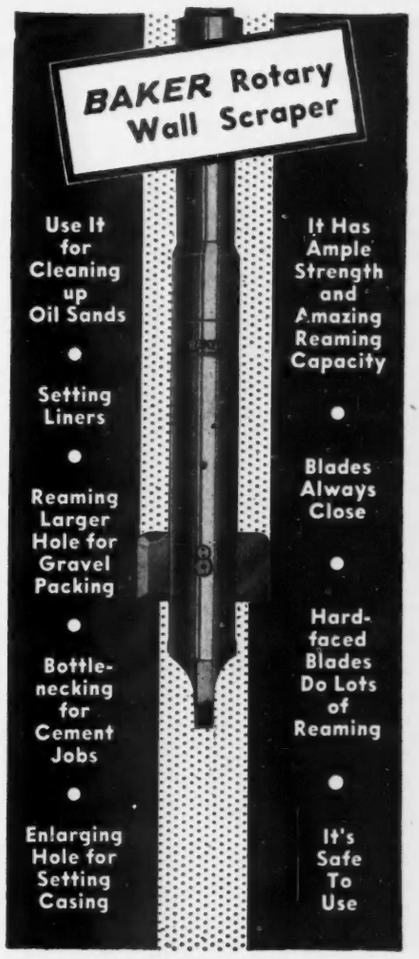
KELLY CARE

A practical means for handling the kelly when the size is reduced to the final portion of the hole consists of the dual rat hole system utilized by one operator. A second rat hole of 7-inch pipe is hung inside the regular 12-inch hole for use when the 2⅞-inch kelly is used. The inner pipe is supported on the lip of the outer one, a heavy flange or shoulder being welded to the top of the smaller pipe to prevent its going through the 12-inch. A pair of ears welded either side of the smaller pipe provides a simple means of hoisting the unit in or out of the hole.

In addition to providing better support for the limber kelly, the slim rathole, when carried inside the larger one facilitates moving, it being possible to move both in the single operation.

When lightweight pipe is used to form the second rat hole, it may be provided with guide flanges along its length to insure alignment within the big pipe.

$5.00 is paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, P. O. Box 2608, Houston 1, Texas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WELDING EQUIPMENT

An electric arc-welding generator, mounted on a small tractor, eliminates the transportation difficulty within the field, but the small tractor is at a disadvantage on the road, and demands excessive travel time when it must be transferred between widely separated fields.

One pipe-line company obtains road transportation for the tractor-mounted welding equipment by providing special cradles on one of the field trucks. These cradles are welded to the steel bed of the truck, close to the cab so as to leave most of the bed free for other equipment. Each cradle consists of a trough formed by splitting a pipe large enough to accomodate the welding unit rear tire, with a buffer formed from a second piece of pipe, fixed at an angle to lie tangent to the wheel.

For road transportation, the tractor is backed onto the truck bed, and guided into the two cradles, with the truck winch line then made fast to the front axle of the tractor, and pulled taut to hold the tires securely into the two supports.

Hinged Service Platform Aids Swivel Maintenance

EQUIPMENT SERVICING

Servicing the swivel is a frequent and frequent and time-consuming job, particularly on deep drilling wells where the unit usually comes to rest some eight or 10 feet above the derrick floor and well out of arm's reach. In order to facilitate lubricating and do away with the delaying and oftentimes dangerous practice of rigging up ladders to get at the uppermost fittings, one company hinges a small steel platform to the girt nearest the level of the swivel, a line attached to the out-swinging end permitting the unit to be pulled up and out of the way when it is not in use.

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Letters to The Editor

Stripper Prices, Public Relations

To The Editor:

Following the line of reasoning presented by Ernest Shamblin (page 70, March 25, 1946, THE OIL WEEKLY):

His presentation of the matter is correctly and ably put. However, he only covered Oklahoma. The same facts are applicable to every oil-producing state in the union and in some states to a very much greater extent than in Oklahoma.

In my opinion the subsidy is only an alternative to the proper approach to a solution of this problem; at best it is always in the unfortunate position of being a political expedient and, therefore, subject to continuous debate as to the amount that should be paid at any given time.

The proper solution is to follow the same principle the Congress has established in fixing a minimum wage scale. That scale must be based upon the minimum requirements of a defined family unit.

Based upon the probable eventual recovery from any producing horizon the Bureau of Mines, in collaboration with the petroleum engineers of the various operating companies, should establish a rule by which an operator could determine his ultimate economic recovery. This rule, of necessity, would have to be flexible enough to anticipate the unknown element that is ever present in the business. After this rule is established there should be a minimum price fixed that any purchaser must pay the operator for his crude oil. This price should be based upon the value of the crude in the ultimate market, and not upon the gravity of the oil.

Price Factors

One of the chief factors in fixing such a rule would be the refining value of the crude. Therefore, the Bureau of Mines would require that the final market value of the refined products of a given crude be the base upon which all calculations to fix minimum price be founded. Other factors in fixing this minimum price would be the wage scale of the labor required to produce the oil, the cost of the replacements, and transportation. If there is any part of the original investment not used in the processes of depreciation it would also have a place in fixing this ultimate value.

After the minimum price is fixed the operator will know exactly what to expect at the low end of the ladder. General conditions will take care of the top end, that is, supply and demand.

Being aware that the purchasers of crude would object to this approach, it is expedient that an effort be made to justify the recommendations.

In this respect it is just as apparent that the purchasers, refiners and marketers must have whatever relief an increase in price required to maintain a minimum percentage of profit, permitting supply and demand to take its course beyond that point.

Then there is the final crux of this entire recommendation: What will the VOTER think about permitting the upping of prices by this method—if indeed it results in upping prices?

If the rule suggested were properly set up and all phases of the industry properly considered in their relationships to each other there would not be enough differential in the ultimate cost to the consumer for him to take note of it unless used as a political football. The most any such program could increase the price of gasoline—just taking gasoline as the most common item—would be one half cent to one cent per gallon. The estimate of what an average family uses in gasoline in a year is about 600 gallons; thus the cost to him in the run of year would be increased by $6, or 50 cents per month—the price of one picture show. Is it conceivable that any American family would prefer that an entire class of the citizenship should produce oil at a loss in order to save them so small an amount? My observation is that every man wants the other fellow to make a profit; and at the same time he wants the opportunity to make a profit himself. There are, of course, still a few "feudal families" that take no thought of whether their neighbors live or not, but they are the exception.

This entire recommendation is based upon the fact that the Congress has entered upon a policy of fixing minimum wages. That being true it follows as night the day that minimum prices for commodities must also be fixed.

The only other alternative is to take all controls off and let the supply and demand determine not only the price of commodities but also the price to be paid labor. It is economically ruinous to attempt to control one and not the other.

Profit Differential

There is also the subject of profit differential between the stripper well and the flush well.

The purpose of the subsidy is to equalize profit differential. If the minimum price base for crude is economically sound, and the income tax laws adjusted to it, the profit differential will not exist inequitably. It is right and proper that the operator who has a new property should make greater profit—the operator who now owns the stripper wells was once in that enviable position. He may be again, and he would be the last man to ask that any rule be fixed that might deprive him of that grand privilege. However, in the interest of the general welfare some method of saving these many old wells must be formulated and placed on a permanent basis.

To support the recommendation that the base price of crude be calculated finally on the refining quality of the crude I give the Smackover crude as an example:

It has been conceded for years that this crude, though low in the price structure due to its low gravity, is one of the most valuable in the entire United States, this based upon its ultimate market value to the consumer. I know it is not the only crude discriminated against because of its gravity. All other commodities bring prices based upon their base qualities; but crude oil brings what the purchaser in control wants to pay for the crude. I submit that this may be cured in only one way—that is, to base the minimum price on the ultimate market value of the refined products from that particular crude.

It is an apparent fact that crude oil was frozen about 50 cents per barrel below parity when the war broke out. The operators have repeatedly presented the facts to sustain this contention but were never able to get relief until the subsidy was granted. Now that the subsidy is approaching the expiration date, it is alarming as to what the result will be unless the problem is constructively solved at once. The subsidy has, since its adoption, been the profit item sustaining these wells, and their operators. It is urgent, therefore, that the Congress approach this problem with an open mind in the interest of the *general* welfare, including these stripper well operators, and solve it permanently.

C. E. Murdock.
221 Exchange Building
El Dorado, Ark.

Talks to Management

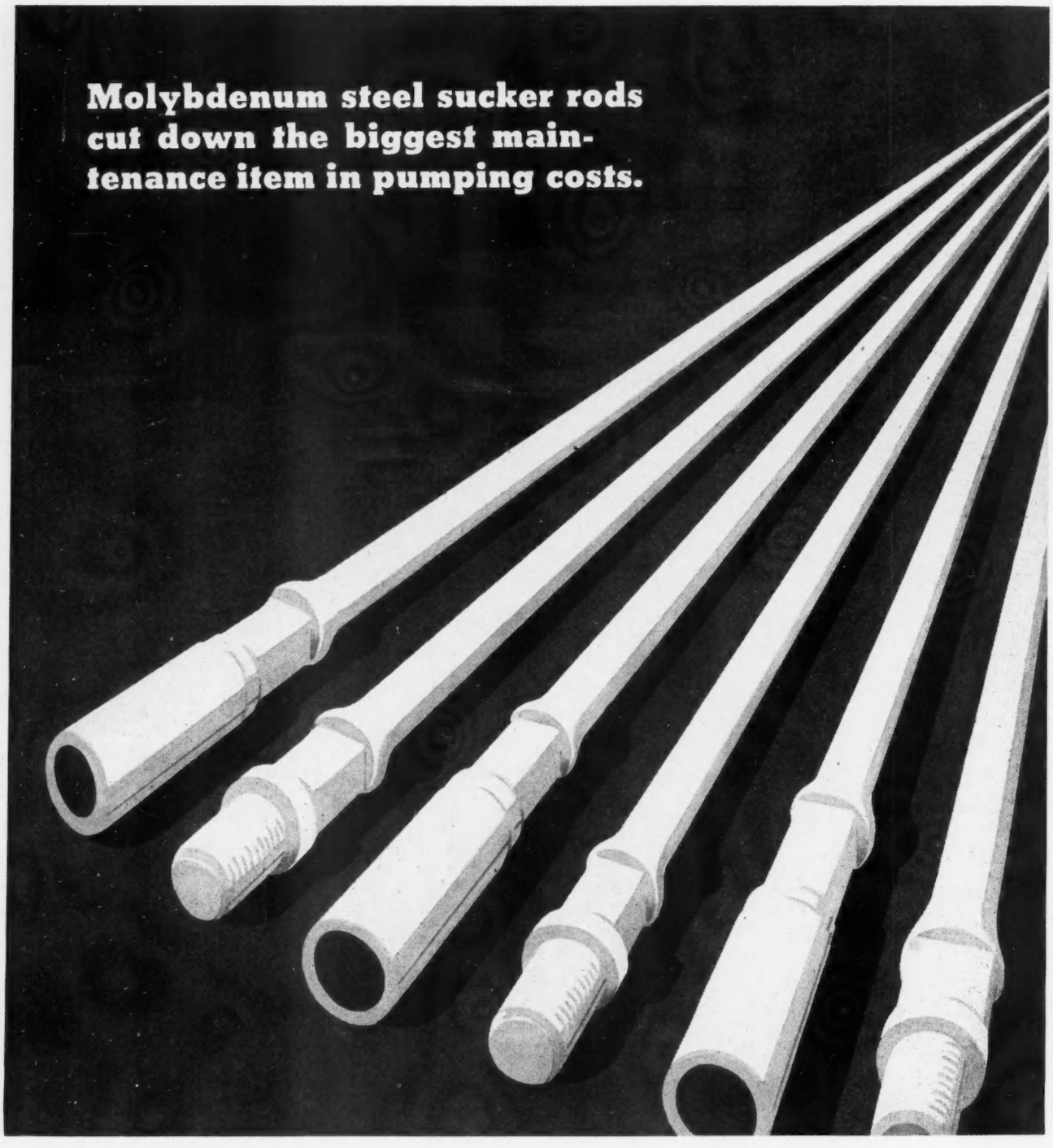
To The Editor:

I was pleased to read the editorial comment headed "Public Relations Improvement Needed" (THE OIL WEEKLY, March 25, 1946). It is encouraging to find an outstanding publication like yours urging, in messages to oil management, the improvement of the industry's relations with its publics. Nothing at this time is more important for the oil industry than firmly establishing a sound basis of public understanding in our efforts and motives.

As you know, the American Petroleum Institute has an advisory subcommittee on public relations, comprising a group of public relations men of the industry, at work on the formulation of a public relations program. The first step has been the taking of a public opinion poll in order that we may know precisely what the American public thinks of our industry. This is now in progress, and later in the year this group will attempt to formulate a program to establish a better public understanding of the industry.

Whether this effort will be successful will depend in the final analysis upon the manner in which each company and unit in the industry undertakes to carry out this program or parts of it. It is for that reason that I am hailing your editorial and I sincerely hope that the petroleum industry press will continue in its efforts to arouse top management to the necessity for aggressive action in this direction.

Franklyn Waltman.
The Sun Oil Company
Philadelphia, Pa.



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NEW EQUIPMENT LITERATURE

For additional information, use mailing card inserted opposite this page

1—Flow Manifold

Thornhill-Craver Company, Inc., has developed an innovation in Christmas tree design in the Unibolt Christmas tree flow manifold. Completely pretested, this unit includes all necessary

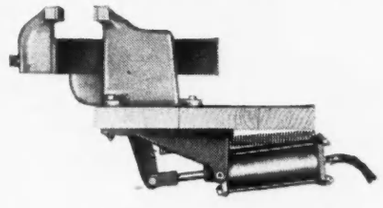
wing fittings above the master valve and makes use of adjustable wing valves instead of gate or plug valves on the arm of the tree.

The one-inch opening in the valve is said to be ample to assure low velocity flow through a small orifice in the positive bean installed in the choke body assembly beyond the adjustable wing valve. The Unibolt fitting on top of the manifold simplifies running pressure bombs or paraffin scrapers and is available in flanged or threaded in any style size combinations desired. This flow manifold is made in 6000, 10,000 or 15,000-pound test pressure units.

(Check item 1 on coupon for more information.)

2—Vise

The Bryant Products Company announces an improved pneumatic pressure vise for industrial use. Table mounted and equipped with a three-way foot pedal valve, this new vise will



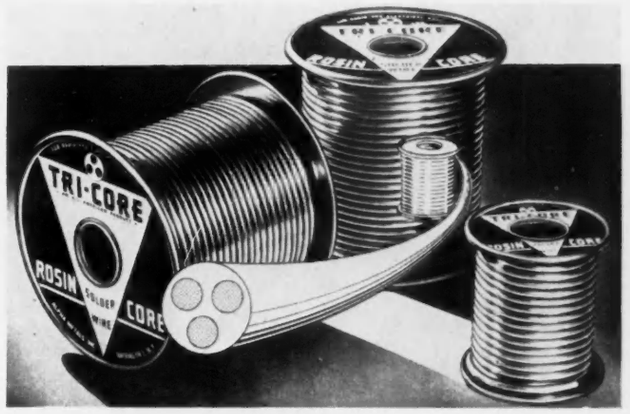
exert a force up to 4000 pounds on a pressure source of only 100 pounds, a ratio of 40 to 1. The vise has a regulator valve so the jaw pressure may be set to any desired value. The jaw, having a one-inch power stroke, may be interchanged with pipe jaws, punches and dies, forming dies, or other tool and material holding devices. The pneumatic cylinder and piston rod are hard chrome plated for longer life.

(Check item 2 on coupon for more information.)

3—Tri-Core Solder

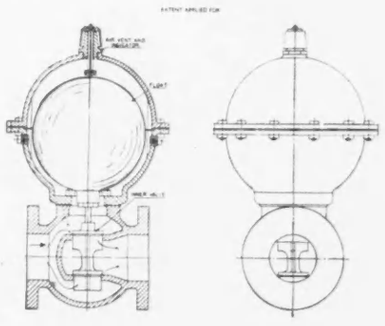
Alpha Metals, Inc., announces production of a tri-core solder, which the manufacturer claims will speed up work with the elimination of dry joints, in addition to substantial savings in tin. This type solder is designed to give proper fluxing at all times, and is said to permit faster melting because of thinner walls. The solder exceeds ASTM Class A specifications and is available in all alloys, all flux percentages and all gauges.

(Check item 3 on coupon for more information.)



4—Valve

Davis Regulator Company has developed a valve designed for use on gathering lines connected to oil field lease tanks. Primary function of the "Air-Lok" valve is to automatically close



the line in which it is installed, as soon as the withdrawal of liquid is completed and before any air or vapor is pumped into the system. The valve consists of a spherical float connected to a balanced double-disc valve.

With oil available in the gathering line, the liquid level rises in the float chamber and causes the valve to open. Threaded connections are provided in the float chamber for possible installation of equalizing lines. Offered in two sizes with flanged connections for use on three-inch or four-inch lines, the valve body is made of semi-steel castings and the interior trim is corrosion-resistant nickel iron. With only two moving parts and no springs, the manufacturer claims that maintenance is practically eliminated and the cost per unit is held to a low level. This valve is recommended by the makers for pressures up to 150 psi and for temperatures up to 250°F.

(Check item 4 on coupon for more information.)

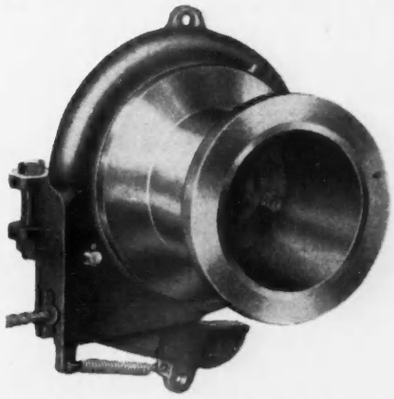
5—Calculator

The Hays Corporation is offering a silde rule type calculator of particular interest to boiler room operators in determining the percentage of total heat loss in flue gas. The calculator is based on several fuels of different analyses and a wide range of flue gas temperatures, making it practical in most boiler rooms. It is necessary to determine the percent of CO_2 in the flue gas, the temperature of the flue gas and room temperature before using the slide rule calculator. Distribution is being made without cost.

(Check item 5 on coupon for more information.)

6—Cathead

American Iron & Machine Works Company is offering a cathead to the operator who requires greater than usual length of stroke of tong line. The Simplomatic "Giant 42" embodies the same

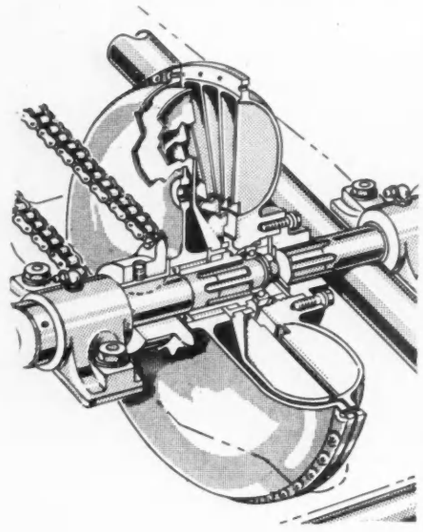


simplicity of design as the "Regular 30." It is positive in engaging and releasing, and the manufacturer claims the jerk line and a number of other parts are interchangeable between the two heads.

(Check item 6 on coupon for more information.)

7—Coupling

Toolcraft Manufacturing Company is producing the Firebaugh fluid drive coupling which is said to be proving itself in a varied number of applications. The coupling operates on the Vulcan-



Sinclair principle, eliminating the necessity for both a transmission and differential mechanism. The unit is self-contained and consists of three basic parts. It can be installed directly on the shaft of any engine or electric motor; it may be engaged and disengaged without manual control and, according to the manufacturers, slippage is eliminated. The fluid drive coupling is completely enclosed, preventing the entrance of dirt and dust. It may be installed in most power transmission units wherever smooth starting and stopping is necessary.

(Check item 7 on coupon for more information.)

8—Flow Beans

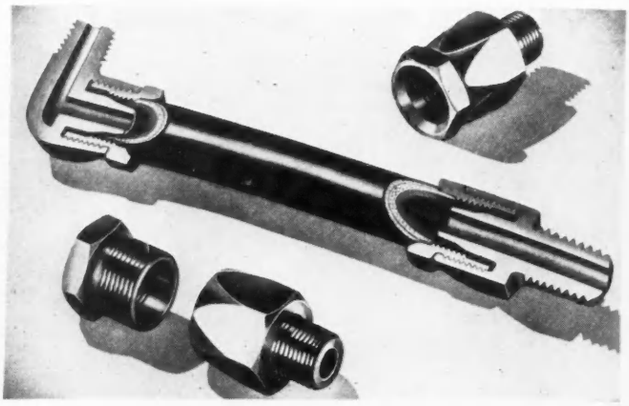
Thornhill-Craver Company, Incorporated, has introduced its Unibolt "X" type flow bean which it is claimed will more accurately control the flow of oil or gas through positive chokes. These

chokes are gauged in increments of 10 percent of flow rather than in fractional or 1/64-inch sizes. These beans are available in 60 sizes up to ½ inch and 31 sizes up to ⅛ inch, as compared to only 16 sizes of fractionally drilled beans up to ⅛ inch.

(Check item 8 on coupon for more information.)

9—Metal Couplings

Resistoflex Corporation announces a complete line of patented attachable-detachable, reusable metal couplings, which now make it possible to hand-assemble flexible hose lines. Composed of two pieces, the coupling nut threads onto the hose, with coupling shell compressing the hose end into a safety-seal gasket. With keep-true threads, the fitting has a long even grip on the hose, the double bell-shaped nut allows the hose to flex without cutting. The heavy body of the fitting prevents crushing or distorting the line. Unusually large square wrench surfaces make the assembly operation simple and quick.



Another advantage claimed by the makers is the reuse of this coupling when the hose has deteriorated. The coupling can be removed, the old hose discarded, and new hose replaced and fitted with these couplings in the field with ordinary end wrenches. When properly attached, it is claimed these couplings will not vibrate loose or release their grip. Application is found wherever fluid or gases are used under pressure, such as air, oil and fuel lines of cars, trucks, busses, tractors, vessels and aircraft. Standard threaded fittings make it possible to be used in hydraulic machinery where flexible hosing is found.

(Check item 9 on coupon for more information.)

10—Plunger

The Gustin-Bacon Manufacturing Company announces an oil well plunger, designed for service where excess sand, water and gas are encountered. Called the G-B Expan-Seal Plunger, it consists of a steel core on which are assembled a series of oil-resisting, synthetic rubber split rings which work in connection with metal spacers. These split rings automatically expand to the pump barrel wall on the lifting stroke and then contract and move off the cup seat on the return stroke. It is claimed this action will reduce friction and wear and allow any sand to be washed away with the oil as well as permitting trapped gas between the pump valves to escape. Designed to work in tubing pumps, insert pumps and in common working barrels, this plunger is available in standard API barrel sizes.

(Check item 10 on coupon for more information.)

11—Gear Type Coupling

John Waldron Corporation, New Brunswick, New Jersey, announces that a new "Series A" coupling has been designed for a much larger maximum bore to permit use of smaller couplings than ordinarily would be required. The smaller coupling takes up less space, needs less shaft extension, looks better and costs less.

This Waldron coupling is all steel, made to close manufacturing tolerances, dust proof, oil tight, identical externally geared hubs that key to shafts, enclosed by one-piece male and female sleeves that function as a single unit. It compensates for misalignment without adding stress to shaft or bearing. Couplings are made in standard, heavy-duty, marine, mill-motor, floating-shaft, Jordan, shear-pin, oil-collector and cut-out types.

(Check item 11 on coupon for more information.)

12—Cutting Unit

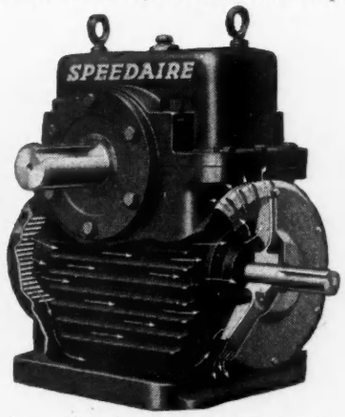
The Victor Equipment Company is now offering a pack-type emergency flame cutting outfit originally designed and produced for the Navy. The oxy-acetylene cutting unit is furnished com-

plete, including protective goggles, spark igniter, hose, leather gloves, cutting tips and wrenches. A detachable pressure reading gauge is fastened onto the emergency cylinder unit to test oxygen pressure. Both the oxygen and acetylene regulators are factory preset to deliver the necessary oxygen and acetylene gas pressures. The unit itself lies in an aluminum cradle and a neat, well-fitting canvas bag holds it firmly to the operator's back. Housed in an aluminum carrying case, the unit comes with spare cylinders packed in a similar case.

(Check item 12 on coupon for more information.)

13—Speed Reduction Unit

The Cleveland Worm & Gear Company announce development and production of a new worm gear speed reduction unit known as "Speedaire." Manufactured in six sizes, this new unit employs



an air cooling feature which it is claimed will reduce the size of the unit required. A light-weight alloy radial-bladed fan is keyed to the worm shaft and exhausts air from the space between the inner and outer walls of the lower section of the housing, creating an air-stream in this passage to effectively cool the walls and the lubricant. Class 1 power ratings range from .96 up to 134 hp and cover a speed range of 580 to 1750 rpm. Lubrication of the radial ball bearings and all other moving parts, with the exception of the two gear shaft bearings, is positive in that the oil bath continuously supplies oil when the unit is in operation.

(Check item 13 on coupon for more information.)

14—Safety Hook

The R. H. Buhrke Company has announced a safety hook for use of towermen who work from hanging ladders. With this device holding a safety strap securely to a rung of the ladder, the worker is assured complete protection at all times. When movement up or down is necessary, the worker simply unsnaps the hook and transfers it with safety to the next working area. The hook assembly is not normally under load, but functions only if the towerman loses his hold or footing.

(Check item 14 on coupon for more information.)

15—Electrode Guide

Hollup Corporation, Division of National Cylinder Gas Company, is offering "Selectrode Chart" in multi-colors and of sufficient size to make the various charts easily readable. The chart guides electrode users in the choice of the correct electrodes for a specific job. It also suggests applications, shows currents, positions, physical characteristics, color identifications, etc., for a wide range of welding classifications. Included are electrodes recommended for mild, low alloy and stainless, non-ferrous and cast iron, surfacing, as well as gas welding rods.

(Check item 15 on coupon for more information.)

Literature

16—Pumps

Worthington Pump and Machinery Corporation has issued three noteworthy bulletins on pumps. Bulletin W-414-B50 describes the new "Variflo" pump, showing graphically and pictorially the principle of operation of this variable-volume pump. Printed in multicolors on standard size notebook paper, this publication shows details of the pump in cross-section, both end and lateral views, with engineering data on various sizes and ratings.

Bulletin W-350-B8, "Worthite Pumps for Slurry Handling" contains information on Worthington's centrifugal pumps, points to consider in pump selection, pictorial illustrations of practical applications as well as fine-line drawings. Applications to the various chemical processes in industry are described giving features of Worthite pumps in each case.

"Reciprocating Steam Pumps," Bulletin RP-275, by Darwin F. Shaub of Worthington's foreign division, is a reprint from *Southern Power and Industry* and contains a fundamental comparison and characteristic limitations on the three types of pumps largely used. Inherent characteristics of the rotary, centrifugal and the reciprocating pump are discussed in view of proper selection for a definite job.

(Check item 16 on coupon for more information.)

17—Worm Gear Units

The Cleveland Worm & Gear Company has issued a pictorial bulletin in three colors describing the applications of worm gear speed reducers to various types of mixing and grinding equipment. The bulletin contains photographic illustrations featuring installations of worm gear units on equipment used by 11 industries and each application is accompanied by a blueprint detailing the drive shown.

(Check item 17 on coupon for more information.)

18—Draw Works Unit

International Derrick and Equipment Company has published a 12-page three-color bulletin, M-10-46, on the new IDECO M-10,000 Powerhoist. Outstanding features of this draw works unit are described and illustrated. Powered by three internal combustion engines, the unit is 100 percent air-controlled in operation, which the manufacturers claim speed up drilling operations. Engineering data throughout and performance characteristics are listed, and a black and white plan drawing of the unit is given.

(Check item 18 on coupon for more information.)

19—Safety Relief Valve

The Cochrane Corporation has recently issued a new publication, No. 4150, discribing and illustrating its multiport safety relief valve. Principle of the multiport valve is fully explained with the aid of schematic diagrams. Actual applications and engineering data on installations are given, accompanied by photographs and cut-away drawings. Included in the bulletin is the revised "Sizing Data on Relief Valves" which gives capacity and pressure rise tables for selecting valve sizes.

(Check item 19 on coupon for more information.)

20—Heat Exchanger

Griscom-Russell Company has published Bulletin 1614 which describes and illustrates the twin G-fin section of the universal heat exchanger used in cooling, heating, condensing and heat exchange service. The bulletin tabulates 21 features and corresponding advantages of this finned tube unit, and describes in detail the design and construction. Many installation views are shown, and field reports of service are also included.

(Check item 20 on coupon for more information.)

Crude Production, Runs to Stills and Fuel Oil Output Register Increases

Crude production, runs to stills and fuel oil output were increased considerably during the week ended April 13. A cutback in the production of gasoline and heavy market needs resulted in heavy withdrawals from stocks, while additions of almost 200,000 barrels per day were made to fuel oil stocks, as production gained and requirements lessened. These trends are based on the latest weekly report issued by the American Petroleum Institute.

The production of crude in the United States averaged 4,691,000 barrels per day during the week, topping the previous week's average by 245,000 barrels, but failing by 120,000 barrels, or 2.5 percent, of matching the 4,811,000 barrel daily average of the comparable week of 1945.

Crude runs to refinery stills, totaling 4,636,000 barrels daily, were 113,000 per day more than last week's daily average, but 177,000, or 3.7 percent, less than the average of the same week last year.

Stocks of refinable crude were reported by the U. S. Bureau of Mines to be 221,214,000 barrels on April 6, which show that 3,780,000 barrels were withdrawn during the preceding seven days, but which still leaves on hand 343,000 barrels more than were held April 7 of last year.

Gasoline output for the week, which includes natural gasoline blended at the refineries, amounted to 13,351,000 barrels, representing a drop of 367,000 barrels from the preceding week and 1,335,000 from the same week a year ago. Stocks of gasoline continued to be reduced as 1,782,000 barrels were withdrawn during the week, leaving inventories at 102,444,000 barrels, 6,667,000 barrels, or 7 percent, more than were on hand a year ago.

Distillate fuel oil production, increasing 205,000 barrels over the previous week's output, amounted to 5,265,000 barrels for the week, an increase of 182,000 barrels, or 3.6 percent, over the output of the comparable week of 1945. Stocks of distillate fuel oil now stand at 30,047,000 barrels, showing an increase of 794,000 barrels during the week, and representing an increase of 1,976,000 barrels over stocks held a year ago.

Residual fuel oil output was up 207,000 barrels over the preceding week, and amounted to 8,608,000 barrels for the week, which is 1,976,000, or 7 percent, more than produced in the same week last year. Residual stocks stood at 37,862,000 barrels at the end of the week, having been increased 573,000 barrels during the seven-day period. Current residual stocks are 3,366,000 barrels, or 8.2 percent, under the 41,228,000 barrels on hand April 14, 1945.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod.		Runs to Stills		Crude Stocks		Gasoline Stocks		Gasoil and Distillate Stocks		Residual Fuel Oil Stocks	
	Barrels Daily	Week Ended	Barrels Daily	Week Ended	Barrels	Week Ended	Barrels	Week Ended	Barrels	Week Ended	Barrels	Week Ended
Highs:												
1941	4,337	11-22	4,120	10-18	266,187	3-29	99,727	3-29	[1]54,983	11-15	102,448	1- 4
1942	4,337	2- 7	3,961	1- 3	263,208	3-28	[1]109,281	3-14	47,861	11-14	95,857	1- 8
1943	4,436	11-13	4,331	12- 4	245,752	5-29	94,159	3-20	47,187	11-27	72,881	1- 2
1944	4,762	9-30	4,798	12-30	240,992	1- 1	89,162	4- 1	48,162	10-28	64,744	10- 7
1945	[1]4,944	7-14	[1]5,140	8-18	227,554	10-13	99,012	3-24	45,341	11-17	56,074	1- 6
1946	4,726	3- 2	4,779	3- 2	229,430	3- 2	105,233	2-16	35,199	1- 5	42,371	1- 5
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-12	71,152	10- 7	20,722	4-15	105,397	4- 3
1941	3,364	1-11	3,490	1-18	240,399	11-15	79,923	10- 4	28,382	4-12	90,914	7-13
1942	3,297	7- 4	3,393	5-23	231,896	12-12	75,934	12- 5	29,240	4-25	72,962	12-26
1943	3,821	1- 9	3,579	3-18	232,191	1- 9	68,182	10-16	30,732	4- 3	57,596	12-25
1944	4,357	1- 1	4,228	2-12	220,258	9- 9	76,302	1- 1	30,232	4-19	49,737	3-18
1945	3,621	10- 6	3,409	10- 6	[4]211,813	8-25	70,791	10-13	26,483	3-17	38,548	5-26
1946	4,403	3- 9	4,498	1-12	218,193	1- 5	98,494	1- 5	25,131	3- 9	37,289	4- 6

TRENDS OF 1945 AND 1946

Trends in Week Ended	Crude Oil			Gasoline		Gasoil and Distillate		Residual Fuel	
	Production Daily	Runs to Stills Daily	Stocks Week End	Production Weekly	Stocks Week End	Production Weekly	Stocks Week End	Production Weekly	Stocks Week End
1945:									
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,561	9,252	51,119
February 24	4,777	4,803	219,351	15,500	95,972	4,958	28,753	9,084	46,713
March 31	4,781	4,677	223,782	14,644	98,758	4,548	26,889	9,184	41,745
April 28	4,805	4,780	223,474	14,633	94,068	4,636	28,273	9,379	39,813
May 26	4,887	4,950	222,831	15,194	89,121	4,667	29,184	9,670	38,548
June 30	4,903	4,999	220,781	15,546	86,472	4,910	32,213	9,077	40,488
July 28	4,930	4,996	218,507	16,106	86,008	4,598	36,071	9,586	42,283
August 25	4,982	4,931	[4]211,813	15,986	84,693	4,960	39,782	9,356	46,201
September 29	4,357	3,812	222,387	11,913	79,552	3,940	43,689	7,047	46,853
October 27	4,273	4,838	224,230	15,530	74,335	5,159	43,472	8,691	45,943
November 24	4,469	4,648	219,363	15,681	83,184	4,802	45,258	8,800	47,474
December 29	4,474	4,729	218,918	14,546	95,205	5,055	36,651	8,765	42,447
1946:									
January 5	4,548	4,651	218,193	14,488	98,494	5,293	35,199	8,867	42,371
January 26	4,626	4,553	220,544	13,622	101,737	5,720	29,498	8,411	39,722
February 23	4,714	4,595	226,699	13,175	104,709	5,728	25,398	7,913	39,290
March 30	4,425	4,684	224,994	13,896	104,715	5,357	28,240	8,738	37,746
April 6	4,446	4,523	221,214	13,718	104,226	5,060	29,253	8,401	37,289
April 13, 1946	**4,691**	**4,636**	.....	**13,351**	**102,444**	**5,265**	**30,047**	**8,608**	**37,862**
April 14, 1945	4,811	4,813	[5]220,871	14,686	95,777	5,083	28,071	8,875	41,228
Change:									
In week	+245	+113	—3,780	—367	—1,782	+ 205	+794	+207	+573
In year	—120	—177	+343	—1,335	+6,667	+182	+1,976	—267	—3,366
In year	—2.5%	—3.7%	+0.2%	—9.1%	+7.0%	+3.6%	+7.0%	—3.0%	—8.2%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922 due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, April 7, 1945.

Tidelands Lease Dropped

The Kerr-McGee Oil Industries, Inc., of Oklahoma City has given up its oil and gas lease on approximately 400,000 acres in the Eastern half of Mississippi Sound. The terms of the lease, for which a $25,000 bonus was paid, called for exploration of the tidelands of the section. The western half of the Sound has been leased to another oil company for purposes of exploration.

Lion Officers Elected

The Lion Oil Company reelected its board of directors at the stockholders' annual meeting at El Dorado, Ark., and the board elected officers as follows: T. H. Barton, president; T. M. Martin, executive vice president; A. F. Reed, J. E. Howell and R. E. Meinert, vice presidents; Jeff Davis, secretary and E. W. Atkinson, treasurer.

Allowable Hearing Set

The State Corporation Commission of Oklahoma has set April 30 for hearings on the May petroleum allowable, according to Walker T. Pound, conservation officer. A conference on amending general rules will be held on the morning of April 29. The scheduled formal hearing on amending the general rules has been continued until May 21.

Baash-Ross News

BAASH-ROSS TOOL COMPANY · LOS ANGELES · HOUSTON · NEW YORK

OUR 26th YEAR

Here Are 6 important ways

BAASH-ROSS "DU" UNITIZED SLIPS save money, save time, save pipe...

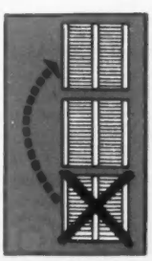
No other rotary slip combines so many vital advancements!

Give us a minute or two of your time and we'll show you at least 6 good reasons why Baash-Ross "DU" Unitized Rotary Slips will boost the operating efficiency of your crew ... will slice your inventory costs ... will save you money, save time, save waste ...

1 SEGMENTED LINERS

With Baash-Ross Slips you don't have to stock different length liners to fit Long and Short bodies. Whether you use 12" Slips or 16" Slips, you need stock only ONE standard-size slip liner to fit *both* bodies. The liners are in 4" segments. *Three* liners fit a 12" body ... *four* liners fit a 16" body. The "DU" liner retaining arrangement is so engineered that the multiple short segments are held just as firmly as single longer liners. No need to waste money stocking different liner lengths—an important advantage in any oil field operations, but particularly in remote locations.

And here's a BIG saving. If your liners wear in one part more than another, there's no need to throw away the whole liner just because one portion is worn. Simply take out the short worn segment, switch its position with an unworn section—and you have virtually new slip efficiency *without replacing a single part.*

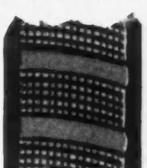


Or, if a segment is too worn for further use, simply replace that one segment and continue to get additional service from the other segments!

This one feature alone—the unique segmented liners used in Baash-Ross "DU" Slips—can make *many* important savings for you ... savings in liner costs, savings in simplified inventories, savings in more efficient slip operation at all times.

2 ADVANCED GRIP DESIGN

The design of the "DU" slip liners is the result of long engineering study to perfect a grip design that gives maximum holding with minimum pipe penetration. Also, the grip area is relieved both vertically and horizontally to eliminate the stress concentrations that cause pipe damage. Your drill pipe gives longer service when "DU" Slips are used!



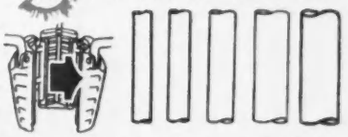
3 NO LINER DIFFICULTIES

Liners in the "DU" Bodies are held in place by deep recesses that insure transmission of all liner stresses directly to the slip body. There are no bolts or pins to shear and drop the liners in the hole, thus causing costly fishing jobs. Yet, by pulling a *single* liner retaining key, the liners in each body segment can be quickly replaced with minimum effort, minimum loss of crew time!

4 POSITIVE SLIP ALIGNMENT

In "DU" Slips all body portions are unitized and work together for positive alignment. Even though off-center pipe may pull on one segment, others also drop in perfect alignment. This valuable feature safeguards pipe and substantially speeds round trips, saving both money and time!

5 WIDE RANGE ADAPTABILITY



In contrast to many conventional slips where a completely new set of slips is necessary to change from one pipe size to another, interchangeable liners adapt the *same* "DU" Body to *many* sizes of pipe. For example—*by changing only the liners*—a 7" "DU" Body fits 4¾", 5", 5⅝", 5¾", 6", 6⅝" and 7" pipe ... *seven different pipe sizes with one body!*

6 UNIQUE FLEXIBLE HINGE

Body segments in "DU" Slips are not simply "hinged" together, but are *unitized* by a unique flexible hinge arrangement that maintains rigid vertical alignment, yet permits *lateral* adjustment of the body segments for a perfect fit in the master bushing bore. This is another pipe-protecting feature, for it insures that the slips take a perfect grip on the pipe even though the bore on the master bushing may be worn or out of alignment. Thus, this unique flexible hinge protects the pipe against damage through concentration of slip pressure!

SIZES FOR ALL COMMONLY-USED PIPE

Baash-Ross "DU" Slips are available in a range of sizes to fit virtually *every* rig operation ... in "Standard" lengths for all pipe 2-3/8" to 7" ... in "Long" lengths for pipe 2-3/8" to 5-9/16". Get full details from your Baash-Ross representative—or write direct!

PIPE LINES

Frank E. Richardson

Consulting Engineer

Harrison 6115

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Kansas City 6, Missouri

LOAD BINDERS

FOR OIL FIELD HAULING

Norton drop forged, heat treated steel load binders (Boomers) for heavy duty service are now available for immediate delivery. Order them through your regular jobber.

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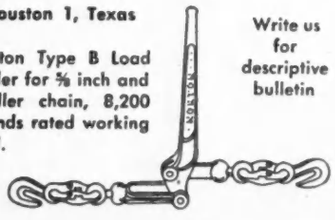
Norton Type B Load Binder for ⅝ inch and smaller chain, 8,200 pounds rated working load.



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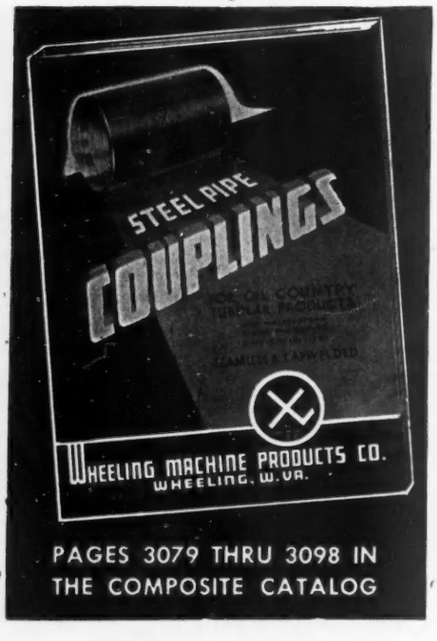

PAGES 3079 THRU 3098 IN THE COMPOSITE CATALOG

Cities Service Plans 405-Mile Gas Line From Hugoton Field to Kansas City

Cities Service Gas Company announced it will construct a 405-mile high pressure pipe line between Kansas City and the Hugoton gas field of Southwestern Kansas.

The $25 million line will have a daily capacity of 290 million cubic feet of gas and will be capable of increasing by 50 percent the volume of gas now delivered to Kansas City on peak days.

The 26 inch line, which will be the same size as one completed in December, 1943, between the Hugoton field and points near Blackwell, Okla., will represent the largest construction job ever undertaken by the utility, according to S. B. Irelan, Oklahoma City, president of Cities Service Gas Company. The first line into Hugoton from Blackwell was completed by laying 200 miles of 26-inch pipe and cost approximately $15 million.

According to Irelan, orders have been made for pipe and application will be filed with FPC for permission to construct the line. Work will begin in the spring of 1947 and completion is expected in October. Only preliminary consideration has been given at the present time to routing the line.

The company has extensive holdings in the Hugoton field, but it is expected that operation of the new line will necessitate the purchase of additional gas or holdings.

At the present time, Cities Service Gas has 4875 miles of pipe lines in Texas, Oklahoma, Kansas, Missouri and Nebraska and serves distributors for 290 towns and cities.

West Texas Tank Car Shipments To Coast to Be Stepped Up

Tank car shipments of West Texas low-gravity oil to coastal refineries to augment the Navy's supply of fuel oil began April 17, and will be stepped up to 35,000 barrels daily for an indefinite period as fast as cars can be placed in this service. This method of transportation is necessary due to all Permian Basin trunk lines extending to the coast having operated at capacity load since late last year.

Increased field allowables were ordered by the Texas Railroad Commission to fill the extra demand. The crude is to be supplied by Humble Pipe Line Company, which will divert 15,000 barrels daily from its runs in Andrews and Ector counties; 10,000 barrels daily by Gulf Refining Company; and 10,000 barrels daily by The Texas-New Mexico Pipe Line Company. The oil will be delivered by these carriers, or through a connecting line by Humble, to the restored 76-car capacity rack erected last week at Midland by Humble Oil & Refining Company.

The rack siding and pipe line connections were purchased from The Atlantic Pipe Line Company, which will provide experienced manpower and operate the Rack for Humble. The rack was originally built and operated by Atlantic to meet war-time demand for crude from the basin, attaining peak loadings of 50,000 barrels daily.

Eastern States Petroleum Company, operator of a refinery at Houston, will be consigned 20,000 barrels daily, while the remaining 15,000 barrels daily will be processed at Humble's Baytown refinery. Other plants may be supplied later with crude from this source. The oil will vary from 30 to 33 degrees gravity, carrying average sulphur content.

An emergency rate of 17 cents per 100 pounds, or 52.92 cents per barrel, was put into effect April 17 by the Texas & Pacific Railway for this movement. The pipe line tariff from West Texas to the coast ranges from 18 to 20 cents per barrel. The difference in cost of transportation will be borne by the government as a means of procuring the required fuel.

F. A. Leovy, Gulf Executive, Announces Retirement May 1

F. A. Leovy's decision to retire May 1 was announced by the directors of Gulf Oil Corporation.

Leovy is vice chairman of the board, a director and member of the executive committee, finance committee and annuity committee of Gulf Oil Corporation; a director and chairman of the board of Gulf Refining Company, and a director and president of Mexican Gulf Oil Company, Western Gulf Oil Company, Venezuela Gulf Oil Company, Gulf Exploration Company, Gulf Research & Development Company, American International Fuel and Petroleum Company, Caribbean Gulf Oil Company, Colombian Gulf Oil Company, Darien Gulf Oil Company and Magdalena Gulf Oil Company.

Leovy was born at Pass Christian, Miss., March 9, 1870. He began his activities with Gulf at Beaumont, Texas, in 1904 and held many responsible positions in the production and pipe line departments in Texas and Oklahoma. In 1914 he was transferred to the principal executive offices of the company at Pittsburgh, where he was engaged in directing production and pipe line activities of the Gulf companies in the U. S. and abroad.

Texas Field Named

The name "Muil" has been given the field discovered by Quintana Petroleum Corporation's C. Muil 1, J. C. Mattison Survey 467, Abstract 606, in Atascosa County, Texas, according to Martin Matson, chairman of the Oilfield Nomenclature Committee, South Texas Geological Society.

Bolivia Approves Plans for Santa Cruz-Cochabamba Line

The Bolivian government has approved a study made by United States technicians for the construction of a pipe line from Camiri, Santa Cruz, to Tin Tin, Cochabamba, where an oil refinery will be erected, it was reported to the Department of Commerce last week.

Cost of the project is estimated at $5 million, which will be borrowed from the Banco Central, the report said.

Standard Diverts East Texas Purchases to Rail Movement

Standard Oil Company of New Jersey, Louisiana division, has diverted 15,000 barrels daily of its Hawkins field, East Texas, crude purchases from pipe line to rail movement to provide more space in Interstate Oil Pipe Line Company's trunk line system between Shreveport and Baton Rouge for the handling of additional crude from North Louisiana and Arkansas fields.

The Hawkins 16 to 30-gravity asphalt crude is purchased from Humble Oil & Refining Company, and normally these purchases along with consignments to other refiners is moved via Humble Pipe Line Company to the Louisiana border near Shreveport, thence via Interstate to Baton Rouge. The trunk line tariff on moving Hawkins crude to Baton Rouge is 12½ cents, while the rail rate is $.3046 per barrel.

Phillips Plans to Expand Hugoton Gathering System

Plans for a 50-well drilling campaign in the Guymon, Okla., sector of the Hugoton gas field has been announced by the Phillips Petroleum Company. The company also plans to expand its pipe line gathering system in the south end of the field.

Locations have been staked for about 20 of the proposed gas wells, some of which are scattered throughout the area covered by the extension of the huge gas field through Oklahoma's panhandle. Most of the company's leases are in the south two townships, adjacent to large company holdings in Hansford and Sherman counties, Texas.

The gathering system in townships 1 and 2 north, 14 and 15 east, is being extended.

Seven-Mile East Texas Line Is Authorized by Lone Star

Lone Star Producing Company has authorized the construction of a seven-mile triple products line system from the natural gasoline and recycling plant being installed jointly with Rogers Lacy in the Carthage field, Panola County sector of East Texas, to a 12-car rack at Carthage. Two 2-inch and a 3-inch will be used for handling natural gasoline. butane and kerosine.

Representatives of the Rogers Lacy Interests, Longview, Texas have canvassed gas producers in the southeast portion of the Carthage field, Panola County, seeking gas commitments for the erection of a 100 million cubic foot daily capacity recycling plant. Lacy is a large producer in the field, and is joint owner with the Lone Star Producing Company in a 50 million cubic foot capacity recycling plant under construction seven miles north of Carthage.

Horizontal Drilling

Now an *established* Operation

AFTER three years of intensive development, testing and perfecting, horizontal well drilling is now made available to drilling operators and oil producers. Zublin Horizontal Drilling is the most revolutionary method of increasing well production introduced since the advent of rotary drilling.

Area of oil sand drainage is multiplied to as much as 20 feet to 1 foot of vertical oil sand.

It is the first and only proved method of increasing oil drainage into the well by the drilling of full size drain holes horizontally, *at any depth*, extending "like the roots of a tree."

Full details, test records and costs upon request.

TURBINE BIT COMPANY

(Under the ownership of John A. Zublin)

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Russia Admits Socony-Vacuum Owns Fields in Austrian Zisterdorf Area

Vienna dispatches have quoted Russian occupation authorities as admitting ownership by Socony-Vacuum Oil Company of fields in the Zisterdorf area, about 50 miles northwest of Vienna, and assuring that "any needed measures of restitution will be taken" to compensate for operation by Soviet forces during occupation.

The company had controlled about 15 percent of the total producing capacity of the country valued at approximately $50 million. The return of these properties does not mean the company will be in the same position it occupied prior to 1938, before German interests entered the country. The firm's holdings consisted of producing areas plus a substantial amount of territory for exploration and development. The Russians have promised return of nothing but the actual producing areas.

In regard to other properties, they have indicated that titles to producing fields that were owned by American or British companies would be recognized, if they were recognized by the Germans themselves as alien property during the war, but as to other companies, they take the attitude that they were German and thus are German assets under the Potsdam clause. Under this claim Socony-Vacuum would lose titles to exploration properties purchased from private interests in Austria. When the Germans acquired them they paid the entire expenditures that had been made on them for exploration and development.

The Russians have bought the oil produced from American-owned properties during their occupation, paying in Austrian schillings, but it is understood they removed a considerable amount of drilling and producing equipment from the property.

The Russians apparently intend to consolidate the companies claimed as German assets into a company under Russian management in which 50 percent ownership has been offered the Austrian government. This would total something like 70 percent of the producing capacity and 50 percent of the refining capacity of the nation. Participation by the Austrian government in such a concern would make it a state enterprise and tend to discourage rivalry by private enterprise.

Application of these methods in Roumania is said to have caused a loss of $3 million during last year by Romano Americana, Standard Oil Company of New Jersey affiliate, because of low prices set by the Roumanian government with which the privately-owned concern cannot compete. Something of the same nature is expected in Hungary, where the Sovmagnafta Company has already been formed, with 50 percent Russian ownership and a Russian general manager with full executive powers.

Crude from Joya Mair Field To Require Special Refinery

Oil discovered in the Joya Mair field, Punjab, India, because of its peculiar character, is unsuitable for treatment in the existing refinery at Rawalpindi, and a special refinery will be necessary, say geologists of Attock Oil Company. Research in this connection is proceeding.

The Joya Mair crude has a specific gravity of 0.950, and is a highly viscous, black oil that rapidly loses its lighter constituents on exposure and becomes solid pitch. It is one of the most asphaltic crudes yet encountered in commercial quantities in any part of the world. Perhaps the most remarkable feature is the complete absence of the middle fractions. Crude of this discontinuous composition has not previously been recorded, states *The Foreign Commerce Weekly*.

Brazilian Oil Pipeline Study Commission Is Authorized

Creation of a Brazilian Oil Pipeline Study Commission, to be named by and be responsible to the president of the National Petroleum Council, has been authorized by the Brazilian Government, *The Foreign Commerce Weekly* reports.

Consisting of three members, the Commission is to be headed by an officer of the military general staff. One of the members is to be a civil engineer who is a specialist in transportation problems, and the third member is to be a civil or industrial engineer with experience in hydraulic work.

This commission is to make a study of pipe line transportation from the Port of Santos to the City of Sao Paulo; to propose pipe lines, indicating the route, general conditions of construction, proper type of installations, and probable cost; and to draw up rules governing submission of bids for construction and operatoin of the oil pipe lines.

Chief purpose of these projected systems is to provide transportation of crude to refineries which are to be built in the state of Sao Paulo.

Daily Average Imports of Oil And Products Fall in February

Daily average imports of petroleum and products dropped to 393,200 barrels in February from 413,000 barrels the preceding month, it was reported last week by the Census Bureau.

Total receipts for the month included 7,102,000 barrels of crude against 8,302,000 barrels in January, and 3,909,000 barrels of refined products against 4,504,000 barrels.

Imports included 6,421,000 barrels from Venezuela against 8,318,000 barrels in January; 3,814,000 barrels from the Netherlands West Indies against 3,122,000 barrels; 525,000 barrels from Colombia against 982,000 barrels, and 251,000 barrels from Mexico against 375,000 barrels.

To Triple Stock

Stockholders of the Far East Oil Development Company, which is drilling in northern Cebu Island, have approved tripling the company's 1 million peso ($500,000) stock to permit a subsidiary, the Trans-American Corporation of San Francisco, to subscribe to a third of the shares.

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☆ Oklahoma

Garvin Well Gets Potential; Grady Wildcat Tested Again

Garvin County discovery gets potential; second drill-stem test made in Magnolia's deep well in Grady County; Wilcox test to be drilled in eastern Oklahoma near Stigler; Texas completes Jackson County discovery at Plug-back depth; California's Love County wildcat runs casing; Coffee Creek pool has new Hunton lime well.

Garvin County: R. H. Dearing & Sons' McBride 1, NE NW NW 30-4n-2w, wildcat which has opened a new area near Maysville, has been completed for a potential of 192 barrels of 60-gravity distillate and 2,160,000 cubic feet of gas per day through ½-inch choke. Production is from the Pennsylvanian sand with perforations at 6586-6591 feet and total depth is 6665 feet. The Lone Star Gas Company will take the gas and Magnolia Petroleum Company will take the oil.

Grady County: While drilling below 11,000 feet in Britt Unit 1, SE NW SW 3-4n-6w, Chitwood pool, Magnolia stopped at 11,184 feet to take a drill-stem test. With packer set at 10,643 feet, the well started flowing 12 million cubic feet of gas in 38 minutes through ½-inch choke and recovered 220 feet of distillate. An earlier drill-stem test at 10,645-984 feet showed 14,400,000 cubic feet of rich gas.

Haskell County: Location has been staked for Samon 1, C SE NE 22-9n-21e, near Stigler. It is a Wilcox wildcat with projected depth of 5500 feet. The well is being drilled jointly by Phillips Petroleum Company and Arkansas-Oklahoma Gas Company who have unitized their leases in the area. Phillips has 3500 acres in the area and Arkansas-Oklahoma, 2000 acres.

Jackson County: The Texas Company's Hickman 1, SW NW NW 6-1n-19w, 3 miles east of the Altus pool, has been completed for a pool opener by pumpnig 41 barrels of oil and 13 barrels of water in 24 hours. It was completed from perforations at 1263-77 feet with plug-back depth of 1569 feet and original total depth of 3017 feet.

Love County: Casing has been run in The California Company's Wright 1, C NE NW 13-8s-1w, wildcat just across Red River from the Sivells Bend pool in Cooke County, Texas. Operators are expected to test 2 sands that had a good show. One sand was encountered at 6190 and the other at 6240 feet. Total depth is 7383 feet.

Oklahoma County: The Mercury Drilling Company of Tulsa is bringing in a gas-distillate well in the Hunton lime zone of the Coffee Creek pool. Wood 1, NE NE NE 21-14n-2w, made 85 barrels of distillate and 21 barrels of water in 24 hours. After reacidizing, the well made 49 barrels of distillate with only a trace of water in 16 hours with an estimated 2,700,000 cubic feet of gas a day. The Wood 1 was drilled to 5858 feet and topped the Hunton at 5765 feet. Casing was set to 5770 feet.

Missouri

In the Forest Basin area of northwestern Nodaway County, J. E. Palensky's Wallace 1, SW NW NW 10-65n-36w, perforated from 1942-2012 feet but there were only a couple of faint oil traces and water rose 1000 feet in the hole. Drilling has been resumed with tools below 2039 feet.

Cass County: Charles Walters' Bush-Pickering Ranch 1, SW NE 29-46n-32w, is drilling below 1961 feet with rotary tools. Operators are drilling a 7⅞-inch hole. The well is approximately 5 miles southeast of the Knoche pool on the Missouri-Kansas border.

☆ Kansas

Burgess Sand Strike Scored Near City Limits of Wichita

Beech Aircraft gets Burgess sand strike northeast of Wichita city limits; pipe set in Rush County wildcat; third well in new Bellman pool gets 1002-barrel potential; Sumner County pool opener finaled; Continental's Barber County gas discovery completed.

Sedgwick County: Beech Aircraft Corporation has made a Burgess sand strike approximately 2 miles northeast of the Wichita city limits. Hinkle 2, SE NE NE 1-27s-1e, was drilled to the Burgess sand with a total depth of 2986 feet and pay from 2980-83 feet. The wildcat had a fill-up of oil at the rate of approximately 1000 feet in the first hour and within 6 hours the casing had filled to 2300 feet above the pay sand. Operators said the well may have an estimated potential of 900 barrels daily. Beech Aircraft drilled the Fourth National 1 ¾ mile from the Hinkle 2 last fall and this well was estimated to be capable of producing 70 to 100 barrels of oil a day but was not completed because of technical difficulties. Beech's Hinkle 1, ⅜ mile southeast of Hinkle 2, was drilled last fall and had several shows of oil but did not make a commercial producer.

Rush County: Darby & Bothwell have set pipe at Wagoner 1, NE NE NW 28-18s-16w, wildcat ½ mile south of the Albert pool. Pipe was set to 3623 feet and operators will test shows encountered in the Reagan, topped at 3614 feet, and Heebner, topped at 3267 feet. A drill-stem test in the Heebner from 3315-26 feet showed an estimated 1½ million cubic feet of gas and recovered 60 feet of gas and oil-cut mud. A core in the Reagan sand had fair porosity with spotted stain. Total depth is 3626 feet.

Sumner County: The third producing well in the Bellman pool of northern Sumner County is being completed by

Wells Completed in the United States in Week Ended April 20, 1946

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second or third issue of each month. More detailed data on wildcats published in third or fourth issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Alabama	....	....	....	....	....	....	....	....	....	....	....	....	5	5
Arkansas	3	....	....	2	5	....	....	....	....	....	5	3	54	39
California	20	1	....	2	23	1	....	....	4	4	28	37	558	606
Colorado	....	....	....	....	....	....	....	....	....	....	....	4	29	10
Florida	....	....	....	....	....	....	....	....	....	....	....	1	6	4
Georgia	....	....	....	....	....	....	....	....	....	....	....	....	1	3
Illinois	27	....	....	10	37	1	1	....	5	6	44	52	583	491
Indiana	4	....	....	2	6	....	....	....	1	1	7	9	101	84
Iowa	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Kansas	15	....	1	5	21	3	....	....	6	6	30	39	613	440
Kentucky	8	1	....	3	12	....	....	....	2	2	14	12	156	139
Louisiana	12	....	....	2	14	....	3	....	5	8	22	25	375	289
North Louisiana	7	....	....	....	7	....	....	....	3	3	10	11	190	90
South Louisiana	5	....	....	2	7	....	3	....	2	5	12	14	185	199
Michigan	2	3	....	4	9	3	2	....	1	3	15	13	200	217
Mississippi	1	....	....	1	2	....	....	....	....	....	2	5	69	112
Missouri	....	....	....	....	....	....	....	....	....	....	....	....	5	14
Montana	4	....	....	....	4	....	....	....	....	....	4	7	68	59
Nebraska	....	....	....	....	....	....	....	....	....	....	....	....	....	2
New Mexico	4	....	....	....	4	....	....	....	3	3	7	11	122	149
New York	15	....	10	2	27	....	....	....	....	....	27	26	306	283
Ohio	4	2	....	2	8	....	....	1	....	1	9	12	296	228
Oklahoma	20	5	....	4	29	1	....	....	3	3	33	46	770	685
Pennsylvania	27	3	15	2	47	1	....	....	....	....	48	49	854	861
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Texas	78	7	3	27	115	3	6	2	27	35	153	157	2,398	2,160
E.Tex.Bor. Co.'s	....	....	....	....	....	....	1	....	....	1	1	....	48	26
Rest of E. Texas	12	....	....	1	13	....	....	....	1	1	14	10	160	60
North Texas	16	....	2	13	31	....	1	....	12	13	44	40	669	471
W. Central Tex.	5	....	....	2	7	1	1	....	2	3	11	16	184	137
West Texas	19	1	1	2	23	1	1	....	2	3	27	29	499	568
Tex. Panhandle	1	5	....	1	7	....	....	....	....	....	7	10	140	192
G. Coast, Upper	5	1	....	4	10	....	2	2	2	6	16	17	224	216
G. Coast, Lower	12	....	....	3	15	1	....	....	1	1	17	25	318	309
Southwest Texas	8	....	....	1	9	....	....	....	3	3	12	7	115	156
S. Central Tex.	....	....	....	....	....	....	....	....	4	4	4	3	41	25
West Virginia	3	8	....	1	12	1	....	....	1	1	14	18	223	227
Wyoming	....	....	....	....	....	....	....	....	....	....	....	1	42	62
Total U. S.	247	30	29	69	375	14	12	3	58	73	462	527	7,835	7,170

* Includes distillate wells. † Includes salt water disposal wells.

Sunray Oil Corporation and has been assigned a potential of 1002 barrels of oil per day. Sunray's Cox 2, NW SE NW 15-30s-1e, had a 3500-foot oil fill-up from the Simpson cut at 3789 feet.

Ashland Refining Company's James 1, NW SW NE 36-32s-2e, pool opener, has been finaled with a temporary potential of 50 barrels of oil per day. Production is from the Arbuckle topped at 3469 feet, total depth 3474 feet. The James 1 has been designated as the pool opener of the Margaret pool and is 2 miles southwest of the Slick-Carson pool which has produced an average of 182,000 barrels of oil per well.

Barber County: Continental Oil Company's Skinner 1, SE NE NE 33-31s-15w, 2 miles east of the old Bear Creek gas pool and 4 miles west of the Skinner gas pool, has been completed with an open flow test of 2½ million cubic feet of gas daily from the upper section of the Mississippi. Production is from perforations at 4697-4720 feet.

☆New Mexico

Cass Field Test Establishes Basal Permian Production

Basal Permian pay established in Cass field, Lea County; Ellenburger pay in Brunson area expanded east; big flow noted in Chaves County sector of Cap Rock field.

Lea County: Continental Oil Company et al's Skaggs 4-B-23, C SW SE 23-20s-37e, southeast offset to 7700-foot production in the Cass portion of the Skaggs field and a failure in the deeper zone, flowed 173 barrels of oil, 43 barrels of water and 8 barrels of rotary mud on 24-hour gas lift test of perforations at 6760-6840 feet. Production is from the Clear Fork, which showed production possibilities in the discovery.

Brunson Field: Magnolia Petroleum Company's Brunson-Argo 11, near C NE NE 9-22s-37e, and ¼ mile east of Ellenburger production, was preparing to perforate for completion with 5½-inch casing cemented on bottom at 7644 feet in granite-wash. This outpost entered the Ellenburger at 7475 feet, being the highest in the field, and flowed oil through tester at 7550 feet. Top of the Ellenburger varies sharply in this area, and the lowest producer entered the dolomite at 8030 feet.

Tide Water Associated Oil Company enlarged its holdings through the purchase of F. J. Danglade and Clower's leases, on the SW of SW 4-22s-37e, and SE NE 5-22s-37e, with a 3700-foot producer on each tract, for $600 per acre cash and $500 per acre from production. Purchase was made to obtain deep rights.

Humble Oil & Refining Company's Hardison 1-B, SE NE 34-21s-37e, offsetting 3700-foot production on the east side of the Penrose-Skelly field, and 2¾ miles north of nearest Yeso lime production, flowed 624 barrels of 38.4-gravity oil, with gas-oil ratio 762/1, through ½-inch choke after acidizing Yeso perforations at 6420-80 and 6500-60 feet. It is 1½ miles northwest of the Paddock field.

Drinkard Field: The Lion Oil Company's Wylie 1, near C SW NW 5-23s-38e and south of production, tested dry from perforations at 8465-80 feet in Ellenburger, topped at 8396 feet, and is perforating higher. The granite was entered at 8518 feet.

Chaves County: Delfern Oil Company's State 1-G, C SW SE 1-13s-31e, southwest edge of the Cap Rock field, flowed at a rate of 400 barrels of oil hourly for 20 minutes before being shut in. This production is from the red sand (Queen) at 3035 feet.

☆ West Texas

Western Andrews Has Prolific Discovery from Ellenburger

Western Andrews County registers prolific discovery from Ellenburger; Kent County's first producer flows after acid treatment; TXL field expanded eastward and showing rise in structure to the south; Bedford and Jones Ranch deep areas have confirmation wells.

Andrews County: Shell Oil Company's Nelson-Humble 1, C NE SE PSL 8, Block A-40, 10 miles southeast of the Brunson field, Lea County, N. M., nearest Ellenburger producing area, responded to treatment with 500 gallons of mud acid and 2000 gallons of regular acid with a flow of 81 barrels hourly on 3-hour test through 20/64-inch. It later gauged 69 barrels of 42.4-gravity oil on 1-hour test through 16/64-inch choke, with rotary mud content dropping from 6 to 4 percent, and 400 pounds working pressure on tubing. This production is from Ellenburger at 10,390-453 feet, correlating 220 feet high to a 10,929-foot granite failure 1¼ miles west by south. Shell's Pinson-Humble 1, ¾ mile southwest of the producer, has spudded to forestall lease expiration. Nearest pipe line connection is the Drinkard field, New Mexico.

Shell and The Texas Company's Ratliff-Bedford 2, southeast offset to their Bedford field dual discovery, entered the Ellenburger at 11,015 feet, correlating 16 feet high, and was drilling and testing the pay at intervals, having progressed to 11,105 feet. It will be dually completed in the Devonian, topped at 8770 feet, or 23 feet high.

Stanolind Oil & Gas Company's University 4-0, ¾ mile northwest of the single Ellenburger producer in the Fullerton-Devonian field, entered the Ellenburger at 10,625 feet, or 10 feet low, and had reached the water table at 10,657 feet. Pipe was set at 10,603 feet to try for a producer in this unusually thin pay section.

Sutton County: Shell's Wilson 1, 20 miles south by west of nearest production, is slated to be plugged back then set pipe for a production test of the Pennsylvanian after recovering 4320 feet of sulphur water when tester was used at 5885-6019 feet. This wildcat entered the Ellenburger at 4792 feet, with elevation 2233 feet, and used tester at 100-foot intervals. Gas-distillate production was passed up near the 4300-foot level.

Gaines County: Amerada Petroleum Corporation's Jones 1-C, ¾ mile southeast of its Jones Ranch field discovery, deepest producer in West Texas, flowed 468 barrels of 43.2-gravity oil, with gas-oil ratio 319/1, on potential test through ¾-inch choke after using 9644 gallons of acid. Production is from perforations at 11,190-272 feet in Devonian, topped at 11,191 feet, or 24 feet low. The company's Jones 1-B, ½ mile west of the discovery, entered the Devonian at 11,342 feet, correlating 148 feet low to the original well and 124 feet low to Jones 1-C, but scored good recovery of oil and gas when drill-stem tested at 15-foot intervals to 11,432 feet. It will continue to water before setting pipe. The record-depth discovery has attained water shutoff after the sealing of perforations below 11,310 feet, and on retest flowed 490 barrels of 43-gravity oil, with gas-oil ratio 353/1. The second producer was completed in 5 months and 22 days, while the discovery required 11 months and 11 days. The cost was reduced more than a third.

Ector County: Texas' T. P.-Fraser 1-E, C NW NW T&P 9½ miles east of the highest Ellenburger producer in the TXL field, entered the Ellenburger at 9530 feet, or 63 feet low, and was drilling pay at 9705 feet, with 5½-inch pipe at 9530 feet. This outpost confirms the deep zone for a width of 1½ miles.

Phillips Petroleum Company's T. P. Land Trust 1-E-a, a mile east by south of Devonian production and 1¾ miles south by east of the TXL fields Ellenburger discovery on the downthrow side of the fault, entered barren Ellenburger at 11,285 feet, or 560 feet low to the latter, and was drilling dry dolomite at 11,425 feet. This structurally low outpost will cause explorations to be confined mostly to the north and east of the downthrow discovery.

The Atlantic Refining Company's T. P. Land Trust 2-D, C SW SW T&P Ry 33 and a ¼-mile south extension for the Devonian sector of the TXL field, was awaiting official gauge of 3 zones of perforations, aggregating 105 feet, between 7744-889 feet in Devonian, topped at 7720 feet with elevation of 3262 feet. This outpost recorded 31 feet higher structural position on the Devonian than the north offset due to thinning of Pre-Devonian beds, and paves the way for further expansion of production to the south. Texas is starting a south offset, while Phillips has an obligation to drill on the tract offsetting to the west.

Phillips et al's Eidson-Scharbauer 1, Ellenburger discovery for the northwest edge of the Penwell field, was testing for water shutoff before perforating for completion in Ellenburger, topped at 8888 feet, or 685 feet high to a failure 2¼ miles southwest. Pipe was cemented on bottom at 9020 feet. This discovery has a comparatively short section of pay above water. E. E. Fogelson and Cosden Petroleum Corporation's University 1-C-D, C SW NW Sect. 1, Block 35, and 1⅞ miles southeast of the above strike, will be the first Ellenburger test in the field proper.

Cities Service Oil Company's Parker-Wentz 1, southwest side of the Harper field, was drilling at 10,645 feet in Devonian, topped at 10,320 feet, or 3041 feet low to the Penwell field deep strike. A show of gas in the Devonian will be tested further. Stanolind et al's Kayser Unit 1, 1¼ miles southwest of the Foster area, was fishing for stuck drill stem at 11,479 feet in barren Devonian, topped at 11,390 feet, or 1204 feet low to the Parker-Wentz 1, 7¾ miles west by north.

Hale County: Stanolind's Irish 1, 3⅝

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miles east extension and higher structurally than the Anton 6-well field, was drilling plugs from 5½-inch casing at 5515 feet, with the hole bottomed in pay at 5881 feet. This outpost promises to be the first flowing well for the area, and will be the county's first producer.

Kent County: Humble's Vick 1, first producer for the county and 105 miles from nearest Ordovician production, had not cleaned itself of rotary mud when it flowed 24 barrels of fluid, including 44 percent bottom sediment and mud, on 1-hour test after using 2000 gallons of acid. This production is from perforations at 7775-7810 feet in Ellenburger, topped at 7773 feet.

☆ Central West Texas

Second Producer in Prospect For New Ellenburger Area

Second producer in prospect for new Ellenburger area near Sedgwick; Coleman County has new Strawn oil discovery.

Shackelford County: Roark-Hooker & J. L. Douglas' Ace Hickman 1, Sect. 16, and about 1800 feet southwest of the recent Ellenburger discovery near Sedgwick, set pipe to try for completion after a drill-stem test at 4230-34 feet returned a small amount of free oil and oil-cut mud. This confirmation well entered the Ellenburger at 4226 feet, or 14 feet low. Phillips Petroleum Company's Nellen Pan 1, ¼ mile northeast of its discovery, was drilling below surface pipe. Other close-in lease owners are due to start developments shortly.

Coleman County: H. T. Owens and Rhodes Drilling Company's McCain 2, NEc S.P. Ry. 14 and a northwest offset to their wet gasser awaiting completion as a discovery, flowed 100 barrels of oil daily while cleaning out after an 80-quart nitro shot in Strawn at 3713-28 feet. The partnership's Gorman 1, the discovery, is idle with a rated flow of 2½ million cubic feet of gas and a spray of oil after nitro shot at 3714-22 feet. This new producing area is 2¼ miles southwest of the Williams field. C. P. Burton, E. L. Smith et al's Bates 1, south offset to the Fulwiler and Hughes drilling Company's Templeton 1, recent gray sand (Strawn) discovery near Silver Valley, missed the pay, and was abandoned at 3545 feet. Owners of the discovery have changed location for Cope 1 to the north offset to the producer.

Louisiana Map Revised

The Statewide Map Company announces a complete revision of the Louisiana Gulf Coast maps, covering the south half of the state and drafted into two sections on a scale of one inch to two miles. These maps show all dry holes, total depths, completion and paleo data. Oil and gas wells are posted up through April 15, 1946. Oil fields are colored green; gas fields, red; geophysical prospects and salt domes, yellow; depleted fields, brown; and slate and sulphur production, purple. Each section is 42 inches wide by 120 inches long and can be furnished on paper or cloth. These maps are available from the Statewide Map Company, 1005 Isabella, Houston.

☆ North Texas

Discovery in Archer County Overcomes Collapsed Pipe

Archer County discovery overcomes collapsed pipe; new oil pay listed for South Scotland field; prospective Oil Creek sand discovery in Grayson County may be junked.

Archer County: Grace & Grace's Edwards 1, Lot 16, George C. Bruner Survey and 2⅔ miles southeast of the Scotland multi-pay field, was making production test after partially clearing up collapsed pipe that occurred when the well was heading 5 barrels of oil hourly. Production is from conglomerate perforations at 5490-95 feet in Bend, topped at 5214 feet.

C. E. Morrison et al's Wilson 1, SE SW ATNCL Sect. 78 and a north offset to 4175-foot production in the south extension of the Scotland field, flowed 528 barrels of 39-gravity oil natural through ¼-inch choke from Strawn sand perforations at 3940-53 feet. This is a new pay for the area. The deeper sand tested oil and water.

Cooke County: J. W. Modesett et al's A. J. Dennis 1, Hugh Henderson Survey A-444, 2000 feet north of 1500-foot production in the Bulcher field, is rated at 30 barrels of 40-gravity oil daily on pump from Strawn perforations at 1820-30 feet. This semi-wildcat entered barren Ellenburger at 2105 feet.

Sivel's Bend Field: Sun Oil Company et al's Midkiff-Davis 1, Sol Gann Survey and a failure in the Strawn zones, was drilling at 8020 feet to explore the 8900-foot Ellenburger. Standard Oil Company of Texas is contributing to the deep test. The latter's Ward 1, Paxton Survey, will attempt to dual complete from 2 Strawn sands. This well flowed 324 barrels of oil, with gas-oil ratio 440/1, on 8-hour natural test through ¼-inch choke from open hole at 6876-96 feet, then flowed 161 barrels through ¼-inch on 9-hour test from perforations at 6630-50 feet.

Grayson County: Standard's Mitchell 1, Sherman deep prospect, was drilling shale and sand at 7890 feet in unidentified formation. Denver Producing & Refining Company's Jewell 1, Sadler area, was attempting to drill out tubing stuck in cementing off liner perforations at 8580-86 feet. This deepened wildcat indicated commercial oil production in the 8500-foot Oil Creek sand.

Foard County: Seaboard Oil Company and Shamrock's Speck 1, a 7000-foot Ellenburger prospect, was drilling lime at 5740 feet. DeKalb Agricultural Association's Kincaid 1, Isaac Aldridge Survey and a 6500-foot prospect, was drilling at 3840 feet.

☆ East Texas

Van Zandt Wildcat Is Failure; Navarro Test Has Nacatoch Pay

Van Zandt County lists wildcat failure; Navarro County semi-wildcat showing for pumper from Nacatoch; Anderson County prospect drilling below 12,000 feet.

Van Zandt County: V. J. Meyer and Danciger Oil & Refineries' Meredith 1, 5 miles northwest of the Myrtle Springs field and structurally high, was abandoned at 8170 feet in Travis Peak, topped at 7955 feet. Broken saturation in the latter zone did not warrant setting pipe for a production test.

Delta Drilling Company's Martin 1, A. T. Flowers Survey and 3½ miles southeast of the Tundra 1-well pool, was drilling shale and lime at 7695 feet. First anhydrite stringer was reported at 7485 feet, correlating 322 feet low to the producer.

Henderson County: Lone Star Producing Company and Magnolia Petroleum Company's Faulk-Wofford 1, B. C. Walters Survey and 3900 feet southwest of the Larue 1-well pool, was drilling shaley-lime at 6795 feet, having entered barren Paluxy at 6497 feet. This marker correlates low, while the Georgetown was about flat with the producer. Lone Star's Hearne-Magnolia 1, J. E. Clancey Survey and on the northwest flank of the Opelika field, was drilling at 8365 feet, having logged the first anhydrite stringer at 7885 feet with elevation of 527 feet.

Navarro County: Tex Harvey Oil Company's Jackson 1, John McNeal Survey and ¼ mile southwest of Angus, pumped 22 barrels of oil and 200 barrels of brackish water on preliminary test of Nacatoch sand at 1410-50 feet. This semi-wildcat was plugged back from 3093 feet, having entered the dry Woodbine at 2860 feet and Georgetown at 3060 feet with elevation of 438 feet.

Anderson County: Humble Oil & Refining Company's Freeman 1, Brushy Creek prospect, recovered stuck drill pipe, and was drilling Rodessa shale and lime at 12,090 feet. This wildcat passed up nominal gas pressure in the James lime, topped at 10,665 feet.

Wood County: W. F. Bridewell and Bobby Manziel's Coker 1, ½ mile north of Crow and a 7500-foot prospect, was drilling sandy-shale at 6010 feet. In the Winnsboro field, Amerada Petroleum Corporation's Brown 1, Ben Lee Survey, set pipe at 8319 feet, or 1 foot off bottom, and will perforate for completion in the Gloyd pay at 8261-8301 feet. Oil saturation was logged in the Bacon lime at 7978-92 feet, with elevation of 507 feet.

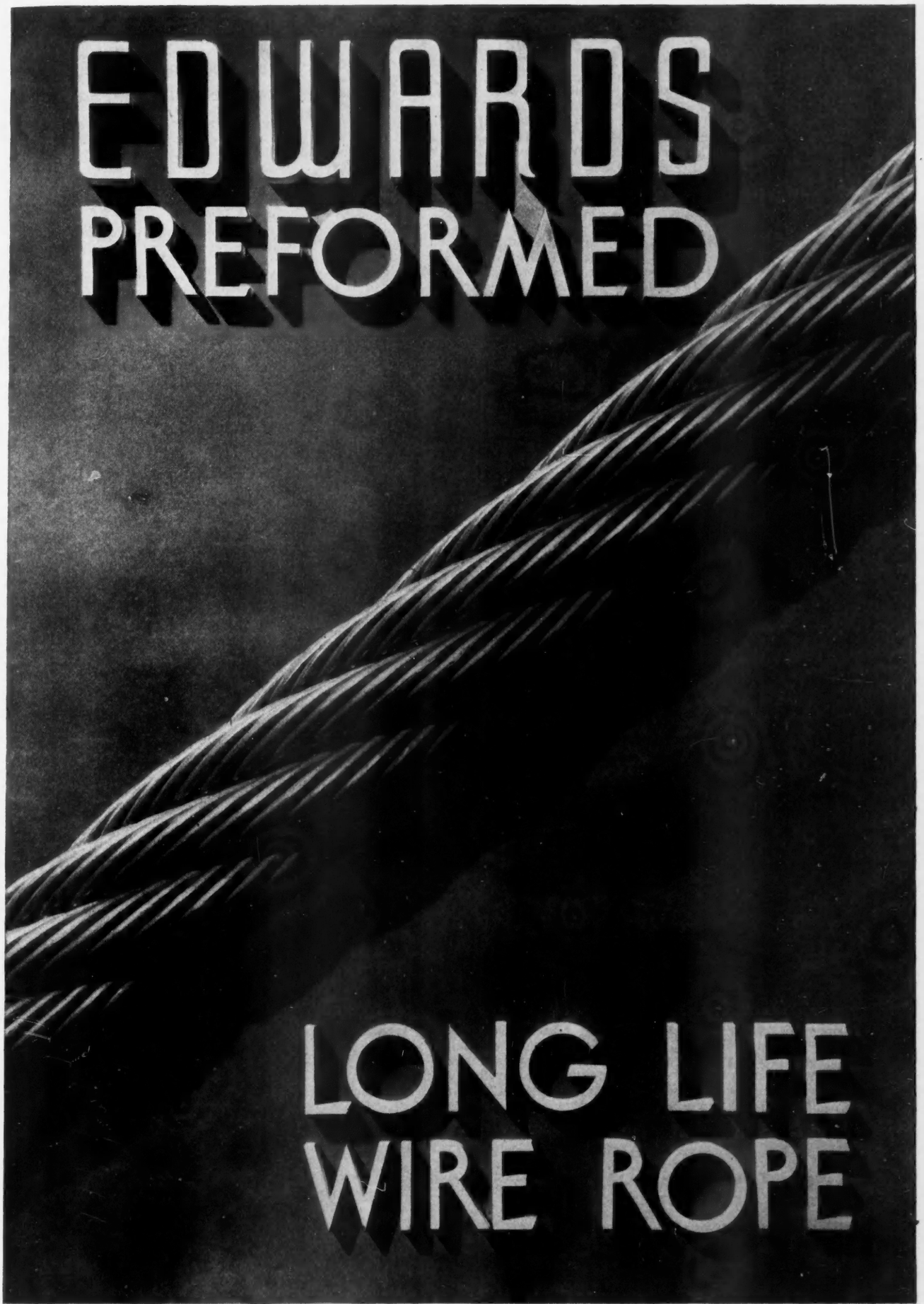
Smith County: Ed Pace and Gordon MacLean's Johnson 1, Andrew Kent Survey and ¾ mile southeast of the Mount Sylvan discovery awaiting completion, was drilling at 4470 feet in broken Austin chalk.

☆ East Texas Border

Further Tests Planned on Magnolia's Marion Wildcat

Magnolia prepares to test further in Marion wildcat; gauge reported on Carthage field well; testing under way on Panola wildcat.

Marion County: Magnolia Petroleum Company's S. L. Orr 1, R. B. Fowler Survey, squeezed off perforations at 9025-35 feet in the basal Travis Peak, where gas-distillate production was assured, and then perforated with 10 shots at 7566-68 feet and squeezed without testing. Crews were to perforate for second production test at 7570-77 feet, where electrical log indicated a good kick and which is just above the interval



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of 7577-86 feet on which a 25-minute drill-stem test was taken when the well was being drilled to recover 1500-foot water cushion, 11 stands of 39.4-gravity oil and 2 stands of salt water. Last squeeze job was run to insure a shutoff from water which was logged lower in the formation.

Panola County: Skelly Oil Company's S. E. Matthews 1, William McFadden Survey and 3 miles east of Beckville, recorded a flow of 140 barrels of 41.6-gravity oil during 4-hour unofficial test through ⅛-inch choke on tubing. The well was testing through the following series of perforations after treating with 4000 gallons of acid: 115 from 6262-85 feet; 80 from 6314-30 and 70 from 6374-88.

There are 15 wells in the Carthage field awaiting official tests, a total of 8 rigs drilling and there were 4 new locations during the week, indicating a decided decrease in development since the year began.

Marsh and Crain's Roquemore 1, David Blankenship Survey, ½ mile south of Beckville, on the north-northwest flank of the Carthage field, had testing operations under way. This well is more than 2 miles north of present gas and distillate production. It was reported to have indicated wet gas production possibilities in the Pettit, but it has not been announced if there was any show in the Travis Peak.

Delta Drilling Company's Ragler-Lewis 1, Davis Survey, after indicating possible gas production in the Travis Peak, developed salt water from perforations at 6478-92 feet, and 6400-24 feet.

Harrison County: Arkansas Fuel Oil Company's Mrs. Zach Abney 1, Bryant Survey, southwest side of the Waskom field, was shut in pending Railroad Commission potential test, after a rework job indicated production of 60 barrels of oil, with a gas-oil ratio of 1700/1. The test is a 1200-foot south offset to the 4-year-old gasser, the O'Banion Unit 1, which was reclassified a Travis Peak oil producer last November when its oil yield increased.

☆ Southwest Texas

Webb County Wildcat Sets Pipe To Complete as Gas Producer

Sun Oil Company's Isaac Hirsch et al 2, Webb County wildcat 26 miles northeast of Laredo in Survey 203 and 1417 feet northeast of the Hirsch 1 dry hole, has set casing at 7080 feet and perforated at 6905-18 feet to complete as a gas producer. Operators are reported still testing this zone with various size chokes and as yet, no gauge is made. On a drill-stem test at 6952-7010 feet, the well developed 1500 pounds working pressure and showed gas with a bottom hole pressure estimated at 1800 pounds.

☆ South Central Texas

Muil Confirmation Prepares To Set Production String

Muil confirmation prepares to set production string; Zavala County wildcat squeezes with kerosine; Bandera County wildcat plans to set pipe; Gonzales County test drills below 10,375 feet.

Atascosa County: Quintana Petroleum Company's C. Muil 2, confirmation test in the Muil field discovery area, J. C. Mattison Survey 467, 4 miles northeast of McCoy and 1320 feet southwest of the C. Muil 1 gas-condensate discovery well, was last reported near the contract depth and preparing to set pipe.

Zavala County: David S. Ring & Raymond I. Arsht's Joe Matthews 2, wildcat 6 miles west of La Pryor in the southwest corner of Sect. 14, I&GN Survey, Block 2, was swabbing the well after squeezing 1000 gallons of kerosine into 130 perforations at 2196-2215 feet in an attempt to dissolve the heavy asphaltic oil shown in the cores taken from the Olmos sand at that depth. On the initial test from this zone, the oil was bailed from the well, and it is expected that the kerosine will loosen up the heavy mixture sufficient to obtain a flow. Total depth is 2230 feet with 7-inch casing set on bottom.

Bandera County: Ray E. Pool's E. J. Rainey 1, wildcat in the north corner of S¼ GH&SA Railway Survey 16, 5 miles east of Vanderpool made a minor show of oil in the Cretaceous, and operators plan to set surface pipe when 800 feet is reached or when they top the Pennsylvania.

Dimmitt County: Barnsdall Oil Company's Sarah W. Henrichson 1, wildcat on an 86-acre lease in the Good Luck Subdivision, Lot 5, Block 15, 2 miles southeast of Valley Wells, moved in a new contract rig and after squeezing is ready for production tests. Total depth of the well is 5280 feet and has 5½-inch casing set to bottom. On previous drill-stem tests, at 5214-26 feet, the packer failed to hold, but oil- and gas-cut mud were recovered.

Gonzales County: Amerada Petroleum Company's Henderson et al Unit 1, 5 miles southeast of Waelder in the James Gibson Survey A-23, was drilling below 10,375 feet. Operators are still looking for the Pettus, which may have been passed up. The last drill-stem test was conducted at 9105-35 feet where salt water was recovered. Previous drill-stem tests up the hole also recovered salt water. The Pettus is expected near the 10,000-foot level.

Milam County: McCrary Oil Company's J. R. & M. A. McCrary 1, 1½ miles north of the Calvert field in the bend of the Brazos River in the northeast end of the Niles F. Smith Survey and 8000 feet northeast of McCrary 2, oil discovery well for the field in Robertson County, has been put on pump for 95 barrels of 36-gravity oil daily. The well flowed 35 barrels of oil by heads when originally completed and operators were reported testing. Total depth of the well is 2120 feet with 5½-inch pipe set to 2095 feet. The Nacatosh sand was topped at 2104 feet.

Houston Geologists to Meet

The Houston Geological Society will hold a two-day conference at the San Jacinto Hotel, April 26 and 27, with tentative plans for a field trip to the Dow Chemical Company's plant at Freeport and a trip to New Gulf to inspect sulphur operations of the Texas Gulf Sulphur Company. Alexander Duessen will discuss "Forty Years of Gulf Coast Geology."

☆ Lower Texas Coast

Pure's Yoakum Field Test Is Recompleted in New Gas Sand

Pure recompletes Yoakum test in new gas sand; Gaffney field gets new gas sand; Amerada abandons Fayette County wildcat.

DeWitt County: The Pure Oil Company's A. F. Karl 1, second test in the Yoakum field 3 miles southeast of Yoakum, adjoining the Lavaca County line, has been recompleted in a new pay zone for a flow of 1,750,000 cubic feet of gas and an estimated 86 barrels of 51.5-gravity condensate per day through 5/32-inch choke. Tubing pressure gauged 2400 pounds from the zone perforated with 40 shots at 8275-85 feet. Original completion was made with perforations at 8663-65 feet, but was considered unsatisfactory, as it flowed with a very high gas-oil ratio to be the fields first oil producer. The Eugene Rice 1, ½ mile north of this second test, made a gas-condensate well from perforations at 8160-90 feet.

Victoria County: Wiegand Brothers & Ralph E. Fair's Mrs. Etta Terrell 1, Miguel Manchaca Grant, 1320 feet southwest of Arkansas' Fuels Mrs. Etta Terrell 1-A, Gaffney field, has successfully conducted drill-stem tests through 36 perforations at 5458-64 feet in a new Vicksburg pay zone. On a 5-minute drill-stem test, the well built up a pressure of 1880 pounds and 265 feet of 37-gravity oil were recovered. These perforations were then squeezed and the well reperforated with 24 shots at 5360-64 feet where a 10-minute drill-stem test developed 2000 pounds pressure and the well flowed gas with the bottom hole pressure estimated at 2500 pounds. Total depth is 5605 feet with 5½-inch pipe set at 5551 feet.

Fayette County: Amerada Petroleum Corporation's G. L. Brown, Jr. et al 1, wildcat 3½ miles north of the Arnim field in the Jacob Stiffler Survey has been plugged as a dry hole after making several tests which showed salt water. Total depth is 4975 feet and 5½-inch pipe was set to 3964 feet. Tests made through perforations at 3518-26, 3520-22 and 2693-2705 feet all showed salt water.

☆ Upper Texas Coast

McCarthy Has Prolific Gasser To Open New Blue Lake Sand

McCarthy completes prolific gasser and opens new oil sand at Blue Lake; American Liberty makes good gasser from injection well; McCoy confirmation ready for tests; Humble finally abandons Newton County wildcat; Madison County wildcat drills for Pettus.

Brazoria County: McCarthy Oil & Gas Corporation has completed a prolific gas well at Holland 1, located on a 275-acre lease in the John Bradley League, Abstract 45, 4500 feet east of nearest oil production and 9000 feet southwest of gas production in the Blue Lake field. It was tested for a potential of 10,850,000 cubic feet of gas along with an estimated several hundred barrels of condensate daily through a ¼-inch

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choke from 8 perforations at 11,012-14 feet. Tubing pressure during the test gauged 7000 pounds, and bottom hole pressure 8796 pounds. Operators estimate the well will produce close to 500 million cubic feet of gas per day on open flow. Total depth of the well is 11,379 feet, and has 7⅝-inch protective string at 10,535 feet with a full string of 5½-inch production pipe set at 11,046 feet. Tubing packer was set at 11,000 feet with a 30-foot length of perforated tubing hung below this point. The producing sand was topped at 10,980 feet and extends to 11,055 feet. Operators have killed the well and are running a string of extra heavy tubing for final completion.

McCarthy's Turnbull et al 1, northeast extension test, also in the Blue Lake area, on a 160-acre lease in the George Robinson League, 3690 feet west of the Masterson 1 and 2650 feet southwest of the Gus & Nannie Simms 1, has opened a new oil pay for the area. Production is through 36 perforations at 8516-22 feet, where the well flowed 233.34 barrels of 34.3-gravity oil daily through a 9/64-inch choke developing 1450 pounds tubing pressure and 1550 pounds casing pressure. Total depth of the well is 9367 feet, with the oil sand topped at 8510 feet and production pipe cemented to 9092 feet.

Matagorda County: American Liberty Pipe Line Company's Dela Braden 1 (formerly The Texas Company's well), Lot 36 of the J. E. Pierce Survey on the east side of production at Blessing, was flowing from a new gas sand. The well was originally drilled by The Texas Company and later turned over to American Liberty as an injection well for the cycling plant. The well was plugged back and pipe perforated in sands at 8425-67 feet where it is flowing into the plant and choked back to 7 million cubic feet of gas and an estimated 200 barrels of condensate daily. Total depth is 10,149 feet and 7-inch pipe is set to 8322 feet with 1976 feet of 5-inch liner set below.

Liberty County: The Ohio Oil Company's B. E. Quinn 2-A, confirmation test for the McCoy discovery area in the Daniel Donahoe League, Abstract 24, about a mile northeast of the company's Kirby Lumber Company 1, discovery well, and 5775 feet southeast of Ohio's B. E. Quinn, dry hole, has conducted 2 squeeze jobs in an effort to isolate the sand section which is reported to have shown some oil between 9128-35 feet. The top squeeze was made through 6 perforations at 9120-22 feet while the lower was made through 6 perforations at 9134-36 feet. Total depth is 9801 feet and 5½-inch casing is set to 9204 feet. The sand section to be tested is believed to be different from that of the producing field, since the discovery well flows from 9107-22 feet.

Newton County: Humble Oil & Refining Company's W. W. Moore, Jr., 1, wildcat 4½ miles southwest of the Bon Wier townsite in the A. D. Stark Survey, was abandoned after more than 10 tests failed to bring commercial production. However, shows of oil and gas were made on several of these tests. The well flowed by heads from 60 perforations at 12,020-030 feet at the rate of 43.5 barrels of fluid (5.4 barrels of oil) daily with a tubing pressure fluctuating from zero to 150 pounds and a gas-oil ratio of 13,700/1. The last test was made through 60 perforations at 9790-9800 feet without favorable results after swabbing for 24 hours.

Madison County: West Production Company & Noranda Oil Company's H. M. Boring 1, deep wildcat 7½ miles southwest of Madisonville in the Amy Boatright Survey, is drilling below 12,510 feet for the Pettus zone. Unconfirmed reports indicate a section in the Edwards Lime has good possibilities for oil.

☆ South Louisiana

Cameron Parish Johnson's Bayou Area Given Gas Field

Gas field discovered in Johnson's Bayou area; Humble sets protective string in deep Terrebonne Parish test; Continental testing deep pay at East Moss Lake; Lake Pontchartrain wildcat sets casing.

Cameron Parish: Continental Oil Company and Sohio Petroleum Company's Cameron Parish School Board 1, wildcat in the Johnson's Bayou area, 16-15s-14w, has been completed to bring in a new gas field discovery for the area, and is now shut in. Initial production was 4.6 barrels of condensate and 1,840,000 cubic feet of gas daily through a 3/16-inch choke making 0.1 percent water. Tubing pressure under flow was 2175 pounds from perforations at 7312-16 feet where the well stands shut in. Gas-condensate ratio was estimated to be 400,000/1. The well was drilled to 9302 feet but was plugged back after flowing salt water from perforations at 9196-9210 feet, developing 2300 pounds tubing pressure.

Terrebonne Parish: Humble Oil & Refining Company's Louisiana State 1, on State Lease 601 in 20s-13e, has finally completed a fishing job, the hole reamed, and now has 7-inch casing set to 12,017 feet. Originally drilled to the 12,000-foot level by Arkansas Fuel Oil Company, Humble took over the well and drilled to 12,030 feet. Preparations were being made for production tests.

Calcasieu Parish: Continental's Prairie Canal Company, Inc. 1-B, East Moss Lake deep test, 3-11s-9w, set 5½-inch casing to 10,490 feet and was last reported perforating with 48 shots at 10,443-453 feet for the production test. A new upper pay was logged at 9997-10,024 feet, but no tests have been made in this zone yet. Total depth is 10,550 feet.

Jefferson Parish: The Atlantic Refining Company's State-Lake Pontchartrain 1-C, wildcat in the Metairie area on State lease 318, Unit 3, in Lake Pontchartrain, is drilling on a scheduled 12,000-foot test after setting 9⅝-inch protection pipe to 7882 feet.

The California Company's E. P. Brady et al 2, approximately a mile southeast of the discovery well at Bayou LaFluer, 24-16s-24e, was coring for the discovery well pay sand below 9765 feet. Operators have already begun a third test for the area with the E. P. Brady 3, 61-16s-24e, which is already below 3000 feet.

Washington Parish: Humble's Gaylord Container Company 1-B, wildcat in the Angie area just below the Mississippi state line in 42-1s-14e, took sidewall samples at 6395 feet and was last reported drilling in shale and sand at 8719 feet. Spudded the latter part of

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January, this year, the well is scheduled for 11,500 feet.

Rapides Parish: Union Production Company et al's Belgard 1, wildcat in the Big Island area, 14-4n-3e, was drilling in hard shale at 11,223 feet after difficult operations in making tests at 10,168 feet. A log was run to 10,466 feet and sidewall samples were taken down the hole. The Paluxy was topped at 10,593 feet, and cores down to 10,742 feet gave no oil shows. On an open-hole test from 10,025-209 feet below the 7-inch casing set at 10,008 feet, the well flowed 2 percent 40-gravity light green oil and 98 percent salt water.

Vermilion Parish: Union Oil Company of California's State-White Lake 2, originally completed at 10,684-688 feet to open production for the field, has been reworked, plugged back and completed for an oil producer in a new sand for the field. The well flowed at the rate of 195 barrels of 41.1-gravity oil daily through a 9/64-inch choke from 36 perforations at 7322-28 feet. Tubing pressure during the test was 975 pounds with a gas-oil ratio of 656/1. Total depth is 10,750 feet and 5½-inch casing is set at 10,713 feet.

☆ North Louisiana

Ohio's Claiborne Parish Test Has Deeper Cotton Valley Pay

Ohio's Claiborne Parish test has new and deeper pay sand in Cotton Valley; East Haynesville has new gas-distillate producer; Pine Island field registers new producer.

Claiborne Parish: The Ohio Oil Company et al's Bond-Beene Unit 1, 22-23n-8w, 3 miles northwest of Haynesville, recorded 476 barrels of 52-gravity oil on 12-hour test through 24/64-inch choke from a new deeper pay sand in the Cotton Valley horizon. Flow was accompanied by a volume of 6,600,000 cubic feet of gas per day with gas-oil ratio 59,000/1. Flowing casing pressure was 4125 pounds, tubing pressure, 3900 pounds. Production is through 380 perforations from 9990-10,130 feet. Well is bottomed at 10,773 and 5½-inch casing is cemented at 10,284.

W. O. Woodward, Trustee's, Mattie Delaney et al 1, 20-23-7w, East Haynesville, was reported a gas-distillate producer at total depth of 5337 feet. Flow of 70 barrels of 74-gravity distillate with gas flow of 3,206,431 cubic feet through a ¼-inch choke was reported on 24-hour test.

Caddo Parish: Union Producing Company's wildcat, Fly 1, 19-16-16w, Mooringsport area, was waiting on cement after setting 7-inch casing at 5800 feet, total depth 6028 feet. Same operator's Noel Estate A-1, 11-19-16w, Longwood area, was reported flowing fresh water and some oil into the pipe. Bayou State Oil Company's Helpman 24, 16-21-16w, Pine Island field, was completed as a small producer from total depth of 1006 feet.

Bossier Parish: Barnsdall Oil Company's Annie O. Hughes 1 (Benton Unit 9), NW SE of 6-20-12w, Benton field, was reported shut in without gauge and without storage facilities. The well, which is ⅝-mile north of the Hanks discovery well, is bottomed at 8242 feet. Completion was in open hole in top of D sand after 7-inch casing was set at 8050 feet. It is reported an extension of the unit area north and east, and showing good production. It flowed into pits until cleaned out and shut in. Same operator's Carter Burton 1, 26-23-13w, Plain Dealing area, a wildcat watched with much interest, is drilling below 9661 feet.

Sabine Parish: Union Producing's Louisiana Long Leaf Lumber Company 1, wildcat, 29-8-11w, Zwolle area, is drilling below 6971 feet in shale and lime. The Carter Oil Company's Louisiana Long Leaf Lumber Company 1, 27-7-10w, was drilling shale and lime after setting 3542 feet of 9⅝-inch casing.

Permits were issued for 2 new wildcats, McDaniel Brothers' Louisiana Long Leaf Lumber Company 1, 33-6-12w, to 6000 feet; and R. P. Bufkin's Thelma S. Flores 1, 20-9-11w, through chalk rock.

Natchitoches Parish: J. H. Liles' Hertzog 1, 11-7-6w, was reported temporarily abandoned, after being shut down since last August awaiting orders, and rig moved from the location.

Grant Parish: R. D. Beville, Jr., completed Swope B-5, 18-19-1e, Georgetown area, as an 8-barrel pumper.

Concordia Parish: The California Company completed A. B. Learned 4, 24-9-10e, 270 barrels through 9/64-inch choke, to total depth 9154 feet, gas-oil ratio 890/1, gravity 38.3.

Tensas Parish: The California Company completed Dix Sanders Unit 2, No. 1, 26-9-10e, 228 barrels through 9/64-inch choke, total depth 9155 feet, gas-oil ratio 875/1, gravity 38.1.

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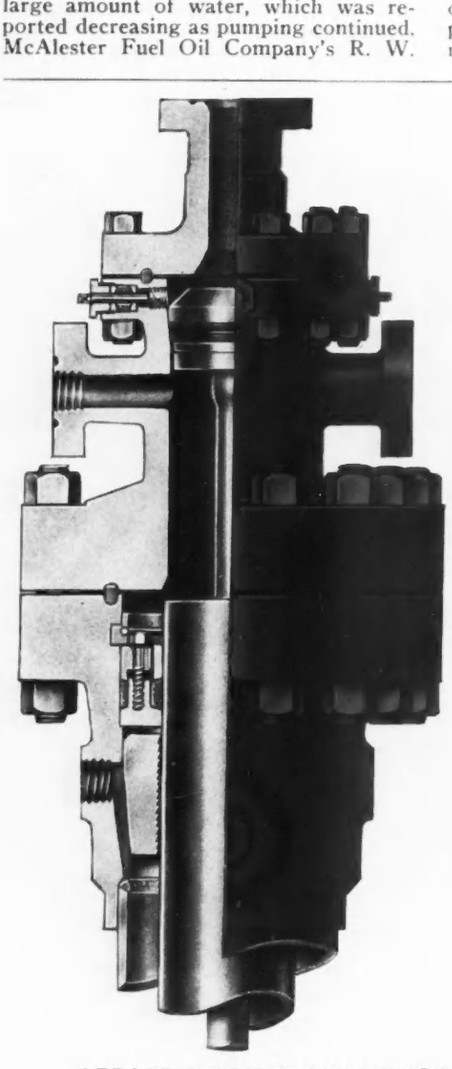
☆ Arkansas

Ouachita County Registers Small Pumper in Smart Field

Small pumper completed in Smart field; 2 small completions registered in Wesson field.

Ouachita County: R. H. Crow's W. G. Taylor B-3, NW SE NE 12-15-20, Smart field, after perforations at 2662-67 feet, pumped 230 barrels of oil daily, with a large amount of water, which was reported decreasing as pumping continued. McAlester Fuel Oil Company's R. W. Wesson B-2, NE SE SE 24-15-19, Wesson field, set casing at 2937 feet and is testing, with good sands reported. In the same field McAlester's R. B. Allen A-2, Sect. 24, perforated casing at 3400-12 feet in Travis Peak, and flowed initially 126 barrels of 38-gravity oil through 10/64-inch choke, gas-oil ratio 350/1. Same operator's C. M. Wesson B-3, Sect. 24, with perforations at 2874-88 feet in the James lime flowed 112 barrels of 32.8-gravity oil through 10/64-inch choke, gas-oil ratio 500/1. Johnston and Owen's Tyson 1, west edge of the Louann field, was completed, producing from the Meakin sand at the rate of 24 barrels of oil per day.



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☆ Mississippi

Cranfield Extension Attempt Meets With No Encouragement

No shows recovered on attempted Canfield extension; Fayette field well makes a duster.

Franklin County: The California Company's Homochitto Lumber Company 2, 27-9n-1e, second attempt to extend the Cranfield field northeastward, met with no encouragement in tests run in the potential productive zone below 10,300 feet. No shows were reported further up the hole.

Marion County: Humble Oil & Refining Company's E. A. Ball 3, NWc 20-2n-14e, Hub field, prepared to run further drill-stem tests after getting good shows from the producing horizon in the 9000-foot zone. In a 20-minute test at 9118-24 feet, 165 feet of 40.7-gravity oil were recovered, and cores taken subsequently from 9124-40 and 9140-45 feet had good shows.

Warren County: Magnolia Petroleum Company's S. D. Finley 1, SE SW SE 27-17n-4e, first test made in the Kings field since the discovery well was brought in, is drilling below 1890 feet in shale. A drill-stem test at 908-18 feet recorded a slight blow of gas together with water. A second test at 1315-30 feet recovered fair shows of gas. The discovery well is producing from sections below the 2000-foot level.

Wilkinson County: Danciger Oil & Refineries' Geo. W. Armstrong 1, 5-4n-2w, deep test, is drilling below 9545 feet without shows in the lower horizons. Hole was cored extensively between 6245-8204 feet and a slight show of gas was reported at 6608 feet.

Wayne County: Humble's Masonite B-1, SWc 21-9n-7w, wildcat, is working below 8032 feet with no shows, a drill-stem test at 7832-41 feet recovered only mud and salt water. In the Eucutta field, Gulf Refining Company's Mrs. Eretta Langley 2, NEc NW NW 11-9n-9w, has been completed with an initial production 74 barrels of oil a day from the Eutaw at 5245-58 feet.

Jasper County: Sun Oil Company's Dr. P. C. Risher 1, 4-10n-10w, East Heidelberg field, prepared to install pump after running good production tests. Three sections of the Eutaw were perforated below 4600 feet and 325 barrels of oil were swabbed in a 16-hour operation. Rogers Lacy's Paul Morrison 1, SWc NW NW 33-1n-13e, East Heidelberg, is drilling below 4000 feet. Only 3 operations are active in the field at present with 3 additional locations set up, as development steadily tapers off after reaching its zenith last year. Two other wildcat tests are due shortly for the county with L. E. Cadenhead's Porter 1, SE SW 25-1n-13e, on location and Southern Oil Production Company's J. E. King 1, SE SE 30-1n-12e, drilling below 1029 feet after running casing to that point. Both will head for the 5000-foot zone.

Lamar County: Gulf's W. E. Davis 3, NWc SW NW 7-1n-16w, Baxterville field, prepared to retest after bottoming hole at 8830 feet in the Massive sand zone. Cores from 8815 feet recovered well-saturated oil sand, and casing has been set for a test.

Jefferson County: Humble's J. Fred Gordon 1, NEc 25-9n-1w, Fayette field, has been abandoned in the face of heavy

quantities of salt water. Productive horizon in the lower Tuscaloosa and Massive sand section was acidized with 2000 gallons but a subsequent drill-stem test recovered only mud, acid and salt water. The operations may be reworked later.

Florida

O. D. Robinson's State Well 1, NEc NW 29-59s-40e, Monroe County deep test, is drilling below 10,940 feet in lime and dolomite. No shows have been reported in the last 200 feet. Gulf Refining Company's State 1, SWc 2-67s-29e, continues to be held up by repairs at a depth of 5530 feet. Driller is attempting to remove drill stem, which was twisted off.

Hernando County: The Ohio Oil Company's Hernasco Corp. 1, NWc 19-23s-18e. is working below 5978 feet. Last drill-stem test at 5585-5605 feet recovered only mud and salt water.

Franklin County: The Pure Oil Company's H. C. Lister 1, NWc 17-7s-7w, wildcat, is drilling below 3978 feet after whipstocking hole at 1016 feet. No shows have been reported.

Collier County: Humble Oil & Refining Company's Gulf Coast Realty 6, SW NE 19-48s-30e, Sunniland field, is preparing to run drill-stem test after cores from 11,558-573 and 11,573-578 feet recovered slight shows of oil.

Alabama

The Carter Oil Company's Rex Alman Unit 1, SW SE NE 4-10n-3w, Gilbertown field, Choctaw County, prepared to install pump after well was swabbed down for 24 hours. Low production was made on test with swab job making only about 6 barrels of oil per hour. Production is from a thin section of sand at approximately 3271-91 feet.

Mobile County: Mikton Oil Company's Mike Vergos 1, C SE NW 21-3s-2w, deep test, is drilling below 7913 feet after topping Marine Tuscaloosa at 7840 feet. No shows have been recovered at any point in the hole.

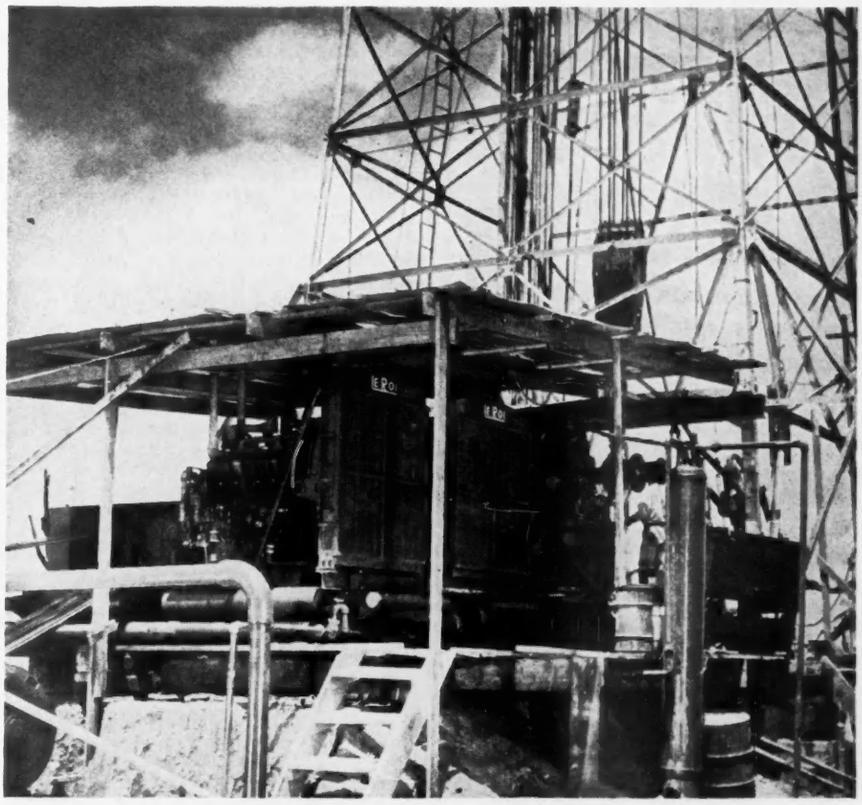
☆ California

Three Tests Seek to Extend Production in Cymric Field

Three outposts will attempt to extend production in the Cymric field; C. G. willis resumes exploration in East Los Angeles area after disposing of most of holdings; East Los Angeles outpost to be tested; Casmalia deep test to be placed on pump.

Kern County: Locations have been staked for 2 outposts in the Cymric field. Miller & York plan a test well in 20-29s-21e, and northeast of this location in the same section The Superior Oil Company will drill on the L. & B. Production Company's property. Standard Oil Company of California has staked location for 43-26w in Sect. 26, an offset to Union Oil Company's Anderson 65-26, and will also drill 4-26w in the same section as an offset to Honolulu Oil Corporation's 83-27. Universal Consolidated Oil Company's Sauerdough 7, another outpost in Sect. 23, has been spudded.

Latest wildcat to be announced for the Dyer Creek area, which has only 1 producing well and several dry holes, is Independent Exploration Company's Deep Well 1, which is to be a Vedder test on



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Sealed bids in duplicate will be received in the office of F. E. Bates at the above address until 2:00 p.m. C.S.T., May 14, 1946.

the Deep Well Ranch Company's property in 4-26s-27e.

Los Angeles County: C. G. Willis, who disposed of part of his holdings in the East Los Angeles area to Shell Oil Company last fall, will drill on his remaining acreage in 15-2s-12w. The deal with Shell included Willis' Pansini 1 well in Sect. 23, which Shell is now deepening from 8200 feet. Willis still has about 150 acres in the area.

Chanslor-Canfield Midway Oil Company is preparing to make production tests in its East Los Angeles wildcat, Bandini 1. Total depth is 10,058 feet with casing run to 9930.

British American Oil Producing Company and The Texas Company have leased 353 acres from Petrolube Oil Company in the Gardena area ½ mile west of The Ohio Oil Company's wildcat, Gardena Community Four 1 in 25-3s-14w. Ohio is continuing efforts to recover survey equipment stuck in this well which is bottomed at 10,067 feet.

Jergins Oil Company's test for Schist production in the west end of the Torrance field is also tied up with a fishing job. Total depth is 4278 feet.

Barnsdall Oil Company has completed R. S. F. 52-3 in the Newhall-Potrero field. The well is the most northeasterly in the field and the lowest structurally.

Orange County: Basin Oil Company will drill a wildcat in the Richfield area. Location is on the Stern property south of the Richfield field in 33-3s-9w.

Santa Barbara County: Bel-Air Oil Company will place its deep test in the Casmalia field on the pump. The well flowed a few barrels of oil and considerable mud and water for a short time from a plugged depth of 4800 feet. Total depth is 5950 feet.

Monterey County: This county now has 2 active prospect wells. Chanslor-Canfield spudded 6-G-1 in the San Ardo area, 6-23s-10e. Bayside Development Company has Vierra 1 in the Moss Landing area down to 7926 feet, with crew fishing for drill pipe.

Accident Severity Rate in Oil Industry Shows Decline

The severity rate of accidents in the petroleum industry declined in 1945, although the frequency rate (number of accidents per one million hours worked) showed an increase, the annual report of the Department of Accident Prevention of the American Petroleum Institute revealed.

Deaths and permanent total disabilities incurred among the 368,133 workers reported were 126, as compared with 136 in 1944 for 346,140 workers. Frequency of accidents rose from 13.57 per million hours worked in 1944, to 14.43 in 1945. The greatest reduction in serious accidents was in the refining branch, where deaths and permanent total disabilities dropped from 64 to 40 in 1945. These occurred among 126,365 workers.

W. C. Whaley Chosen Head of California Producers Agency

W. C. Whaley, vice president of Barnsdall Oil Company, and general manager of its California operations, was elected president of the Oil Producers Agency of California, succeeding C. P. Watson, vice president of Seaboard Oil Company.

Other new officers are H. E. Woodworth, Safe Oil Company, first vice president; R. H. Garrison, Hellman Estate, second vice president; C. C. Spicer, Republic Petroleum Company, third vice president; C. A. Johnson, Holly Development Company, fourth vice president; Rush M. Blodget, Blackfoot Petroleum Company, executive vice president; W. A. Russell, Seaboard Oil Company, secretary-treasurer; Verne Harrell, Bankline Oil Company, assistant secretary-treasurer.

The reelection of Blodget as executive vice president marks the beginning of his 16th year as manager of the agency. He assumed that position at the organization of the group in 1931.

Kansas Hearing Set

April 26 is the date for the Kansas market demand hearing for May, according to the Kansas Corporation Commission. The hearing will start at 10 a.m. in the Allis Hotel in Wichita.

☆ Illinois Basin

Illinois Gets Apparent Pool Opener East of Mattoon Field

B. A. Baker has apparent pool opener east of Mattoon pool, Illinois; Gallatin County test swabs 35 barrels daily from McClosky after acidizing; Wayne County wildcat showing for pool opener; Posey County, Indiana, has new pool east of New Harmony.

Illinois

B. A. Baker's Miller 1, SE NE NW 6-11n-8e, Coles County, apparently is

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opening a new pool (probably small) 2 miles east of production in the south end of the Mattoon pool. Drilled several months ago, the well is testing 1½ barrels of oil per hour from Cypress sand after a 20-quart shot. Pay was encountered at 1890-1900 feet.

Gallatin County: Deep Rock Oil Company's Pioneer Trust and Savings Bank 1, NW NW SE 2-8s-8e, 2 miles east of Omaha pool production, is swabbing 35 barrels daily after 2000 gallons of acid in McClosky lime at 2855-65 feet.

Wayne County: Deep Rock Oil Company's Spicer 1, SW SW NE 25-1n-1e, 2½ miles west of the Johnsonville pool, is showing for a pool opener. During a 1-hour drill-stem test, the well yielded 90 feet of oil and no water from McClosky lime at 3075-80 feet.

C. E. Brehm's Blessing 1, NE NE NE 31-1n-8e, 7 miles north of Fairfield, has set casing for production test of O'Hara lime at 3102-12 feet. The well showed 1500 feet of clean oil and no water after gassing during the first 15 minutes of a 40-minute drill-stem test. The well is 2½ miles from nearest present production.

Indiana

Fox and Fox are opening a new pool at Audrey 1, SE SW NW 10-4s-14w, Posey County, in Tar Springs sand at 2210-15 and 2225-50 feet. The well made 1½ barrels per hour natural. Operators are cleaning out and testing after a 40-quart shot. The well is 1½ miles east of the New Harmony pool in Illinois but is separated from production by dry holes.

Illinois Activity Brisk

Operations in Illinois last week reached the greatest peak since October 31, 1944, to give indications the state may have one of its best drilling years. Operations totaled 296. First reports totaled 76 and completions totaled 33. The Mattoon pool continued to lead the state in activity with 54 operations. Second high in the state was the Clay City pool with 22.

☆ Michigan

Clare County Test Cores 20 Feet of Sand in Lower Monroe

The Pure Oil Company's Freer 1, N½ NW SW 18-17n-6w, Clare County, Garfield township wildcat, idle at 5037 feet since January 11, to convert from cable to rotary rig, cored 20 feet of sand formation in the Lower Monroe. Previously at 5012-37 feet the well tested 10 million cubic feet of gas and 96 barrels of distillate per day in sand and dolomite in the Richfield section of the Monroe.

Isabella County: Chartiers Oil Company's Diehl 1, N½ SW NW 29-15n-6w, outpost a mile northwest of the old Sherman field, flowed 68 barrels of oil and 1½ million cubic feet of gas from Traverse lime pay at 3282-3293 feet following plugback from 3779 feet and 500 gallons of acid. The extension is expected to bring several new operations.

New Starts: Twenty-four drilling permits, including seven wildcat locations, approved by the Department of Conservation, established a 1946 high. Shallow gas locations accounted for 8 starts.

☆ Canada

Lloydminster Field Strike Flows 40 Barrels Per Hour

S. A. C. Oils 4, NE lsd 16 3-49-28w3, Saskatchewan side of the Lloydminster oil field and about 200 feet east of the Alberta boundary, put new life in this field of small pumpers when it commenced flowing crude oil at 40 barrels per hour. Flowing wide open through 5½-inch casing, the well had settled to 20 barrels hourly after 36 hours.

The well is at the south end of a group of a dozen pumping wells, all of which indicated from 5 to 40 barrels daily initial flow, and are now yielding from 10 to 60 barrels per day on pump. The oil is heavy (14.7 degrees) and contains some water at practically all wells.

It is not expected that the "gusher" will stand up at anywhere near its initial flush, but the likelihood of a better than average producer has brought a surge of interest that should stimulate development in the Lloydminster area.

Rule Rescinded

The State Corporation Commission of Kansas has rescinded wartime emergency rule 109-G, which permitted production of oil from two stratas through the same well bore.

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EXPLORATORY COMPLETIONS

CALIFORNIA WILDCATS

Kern County—Failures: Gene Reid Drilling's Lorraine 1, 2-28s-27e, Kern Front area, Pyramid Hills 3890 ft, Grit 3899, Vedder 3901, abnd 3961.

Wilshire Oil's McKittrick-1, 12-30s-21e, McKittrick area, abnd 2056.

San Joaquin County—Failure: Ohio's Pacific States 1, 3-1n-4e, Middle River area, Markley 4155 ft, Green Sand 4577, Capay Shale 5388, McDonald Island Sand 5567, abnd 5826.

Los Angeles County—Failure: A. W. Lyddon, Operator's William Rowland Estate 3-1, 17-2s-10w, Turnbull area, abnd 8667.

ILLINOIS WILDCATS

Bond County — Failure: Continental's Oestringer 1, se se nw 31-4n-4w, abnd 1120.

Christian County—Discovery: John Wrather's Thompson 1, se se se 15-15n-2w, pumped 31 bbls day, Dev. Ls. 1872-83 feet, td 1896.

Fayette County—Failure: Oris Eakin's Eakin 1, nw sw se 8-5n-1w, abnd 1430.

Jefferson County—Failure: Texas' Burr-Oak Coal 1, nw ne nw 8-4s-1e, abnd 2832.

Moultrie County — Failure: Collins Bros.' Lanum 1, nw sw se 26-13n-5e, abnd 2009.

Shelby County—Failure: N. V. Duncan's Shuemaker 1, ne ne nw 12-10n-6e, abnd 2369.

INDIANA WILDCAT

Daviess County—Failure: Burton & Brewer's Conlin 1, se sw ne 17-2n-5w, abnd 740.

KANSAS WILDCATS

Barton County — Failure: Raymond Gear's Axman 1, ne ne ne 14-17s-15w, abnd 3505.

Harper County—Failure: Lion Oil's Reed 1, se nw nw 3-33s-8w, abnd 5165.

Hodgeman County — Failure: Continental's Reginer 1, nw nw sw 2-24s-21w, abnd 4998.

Seward County—Failure: Stanolind's Federal Land Bank 1, C n/2 s/2 14-35s-31w, abnd 6800.

Sumner County—Failure: Ashland's Patton 1, sw ne sw 31-32s-2e, abnd 3766.

Rooks County—Failure: Brunson & Martin's Jones 1, ne ne ne 3-6s-19w, abnd 3500.

KENTUCKY WILDCATS

Butler County—Failure: Olstrum et al's Belcher 1, 21-H-32, abnd 857.

McLean County—Failure: Jackson & Vance's Poiles 1, 18-M-29, abnd 945.

Henderson County—Failures: Q. B. Mitchell's Thornsberry 1, sw se se 5-N-23, abnd 2785.

Delta Drlg et al's Boswell 1, sw ne sw 7-P-26, abnd 2332.

Ohio County—Failure: J. F. Minuette et al's Ashly 1, ne nw sw 1-L-31, abnd 1180.

NORTH LOUISIANA WILDCATS

Madison Parish — Failure: J. Lee Youngblood's U.S. Dept. of Agriculture 1, 34-15n-14e, Wilcox 2884, Tuscaloosa 6845-55, abnd 8032.

Richland Parish—Failures: Chas. G. Glasscock's L. & E. Hightower 1, 5-15n-7e, Wilcox 1276, Chalk 2680, Tuscaloosa 2690, anhy 4122, massive anhy 4355, abnd 4502.

H. G. Lewis-Austin E. Stewart's Richland Parish School Land 1, 16-15n-6e, Tuscaloosa 2604, Paluxy 3422, Glenrose 3880, abnd 4195.

SOUTH LOUISIANA WILDCATS

Livingston Parish — Failure: Texas Co.'s State-Catfish Lake Lse 378-18, 37-7s-3e, Denham Springs area, abnd 9504.

Plaquemines Parish—Failure: Gulf's Eugene De Armas et al 1, 57-20s-18e, abnd 13,035.

SOUTH LOUISIANA NEW PAY TESTS

Calcasieu Parish—Oil Discovery: Shell's F. Hoyd 35, nwc ne¼ 13-9s-7w, perf 45 shots 5180-88, flow 162.5 bbls 34.5-gr, 9/64-in, 728,000 gas, tp 1400 lbs, cp 2000 lbs, td 5262.

St. Mary Parish—Oil Discovery: Lynn Oil Co.'s Hine Est. 2, swc, lot 8, 31-13s-10e, pay 6458-6505, perf 60 shots 6480-90, flow 150 bbls 38-gr, 9/64-in, gor 700/1, tp 1100 lbs, td 7004.

Vermilion Parish—Oil Discovery: Union of Calif.'s State-White Lake Lse 540-2-A, (OWWO) 1320 w of disc well A-1, T-14s-2w, pay 7318, perf 36 shots 7322-28, flow 195 bbls 41.1-gr 9/64-in gor 656/1, tp 975, td 10,750.

MICHIGAN WILDCATS

Van Buren County—Oil Discovery: Ford Oil's Tolles 1, sw se ne 10-1s-16w, Traverse lime 1110 ft, pump & flow 110 bbls, td 1112.

Van Buren County—Failure: Lang Oil's Pineu, nw nw sw 11-1s-16w, abnd 1142.

FIELD OUTPOST COMPLETION

Isabella County — Sherman Field Outpost: Chartiers Diehl 1, n½ sw nw 29-15n-6w, Traverse lime 3190 ft, pay 3280-93, Dundee 3767, td 3779, pb 3300, flowed 68 bbls oil, 1½ million cu ft gas after acid.

NEW MEXICO WILDCATS

Lea County—Failure: Taylor-Powell & Wallrich's Page 1, c sw ne 26-24s-34e, elev 3450 ft, anhydrite 972, salt 1165-2485, lime 4308, abnd 4710.

Roosevelt County—Failures: W. J. Peterman et al's Taylor 2, 1220 ft nsl and 1100 ft ewl 22-2s-30e, elev 4581 ft, Santa Rosa sand 607, anhydrtie 1122, abnd 1170.

W. J. Peterman et al's Taylor 3, 1050 ft nsl and 1050 ft ewl 22-2s-30e, elev 4580 ft, abnd 610.

OKLAHOMA WILDCATS

Jefferson County—Failure: Bridwell O & G's Brett 1, sw sw ne 15-6s-6w, band 3060.

Okfuskee County—Failures: Zephyr Drlg.'s Spaniard 1, se sw se 29-12n-8e, Cromwell 3761 ft, abnd 3769.

Fred C. Summers' Leonard 1, nw nw nw 23-13n-7e, abnd 3388.

WEST TEXAS WILDCAT

Crockett County—Junked: T. W. & J. M. Loffland, Jr.'s Cox 2, se se sw I&GN Ry. 27, blk 2, jkd 455 ft, skid 12 ft west.

WEST TEXAS NEW PAY DISCOVERY

Winkler County—Keystone Field Devenian Discovery: Stanolind's Mack Taylor 1, tr. 2, c sw sw PSL 8, blk B-2, mi east of Ellenburger production, elev 2978 ft, anhydrite 940, base salt 2380, Yates 2530, San Andres 3850, base Permian 7570, Woodford shale 7600, Devonian 8040 to 8135, Fusselman 8470, Montoya 8800, Simpson 9255, Ellenburger 10,245, flowed 617 bbls 32-gr gas-oil ratio 536/1, via 16/64-in, acidized 4000 gals via Devonian perf 8040-8135 ft, td 10,280, pb to 8730.

WEST TEXAS EXTENSION COMPLETION

Cochran County — Landon Field Outpost—Failure: Gulf's Taylor 1, c se sw Harrison & Brown sec 43, 1¼ mi n outpost, elev 3806 ft, anhydrite 2370 ft, brown lime 3980, San Andres 4358, abnd 5153.

WEST CENTRAL TEXAS WILDCATS

Concho County—Failure: B. A. Duffy et al's Stephens 1, c sw sw H&GN Ry. 79, blk 71, elev 1799 ft, abnd in Cambrian fresh water sand 3490.

Jones County—Failure: S. D. Johnson et al's Sears 1, 990 ft snl and 330 ft wel T&P Ry. 35, blk 18, elev 1882 ft, Noodle Creek lime 2476, abnd 2590.

WEST CENTRAL TEXAS NEW PAY DISCOVERY

Jones County—Cooper Field New Oil Pay Discovery: S. B. Roberts et al's Cooper 7, nw nw se T&P Ry. 29, blk 15, 4th oil zone for area, elev 1703 ft, Flippen 1980 ft, pumped 231 bbls 40-gr, gas-oil ratio 380/1, acidized Hope perforations at 2186-90 ft with 4000 gals td 2340.

NORTH TEXAS WILDCATS

Archer County—Failures: Geo. W. Cooper et al's Jones 1, 990 ft nsl and 2550 ft wel T. Freeman sur A-134, elev 1035 ft, abnd 5036.

Peterson-DeMontel & Hutcheson's Harris 2, 1400 ft nsl and 150 ft wel blk 60, Harris subdiv, abnd 1433.

C. C. Winfrey et al's L. F. Wilson 1, 850 ft snl and 1800 ft ewl sec 120, ATNCL sur, jkd and abnd 616.

C. A. Reid et al's Prideaux 1, 1700 ft snl and 1717 ft ewl sec 1837, TE&L Co. sur, abnd 1401.

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Cooke County—Failure: Trumter Pet. Corp.'s Judy 1, 200 ft ewl and 685 ft nsl Crowell & Hawley sur A-285, elev 1048 ft, abnd 1360.

Denton County—Failure: Leland Fikes et al's Phillips 1, 330 ft wel and 430 ft nsl E. T. Ry. 35, A-1674, Aubrey area, elev 709 ft, base Trinity 1735 ft, Bend 2441, abnd 3007.

Jack County—Failures: Hanlon & Buchanan's Powers 1, 233 ft out NWc W. L. Hunter sur A-966, abnd 750.

Kadane-Griffith's Halsell 1, 4000 ft wel and 990 ft nsl McKinney-Williams sur A-426, Buttram sand 1822 ft, abnd 3310.

Montague County—Failure: Grady T. Chupp et al's Durham 1, 330 ft out SEc W. J. Wagnon sur A-936, granite 4113 ft, abnd 4116.

Wichita County—Failure: D. H. Bolin et al's Obenhaus 1-B, 150 ft out NWc of 100-ac tr, Mary A. Bush sur A-24, abnd 2028.

Wilbarger County—Failure: Smiley-Norwood Dr Co.'s Tarlton 1, 150 ft wel and 250 ft nsl blk 115, Waggoner Colony Lands, abnd 2018.

Young County — Failure: R. J. Watson's Jones 1, 1000 ft snl and 850 ft wel TE&L Co. 251, abnd 650.

NORTH TEXAS NEW OIL PAY

Wilbarger County—National Field's New Intermediate Pay: National Associated Pet. Co.s A. C. Smith 1, nw nw ne H&TC Ry. 30, blk 13, 6th oil zone, elev 1221 ft, Canyon 3196 ft, Rock Crossing (Canyon) lime 3658 ft, flowed 242 bbls 39-gr, gas-oil ratio 300/1, via ¼-in, acidized 500 gals, Rock Crossing 3659-76.

EAST TEXAS WILDCATS

Kaufman County—Failure: O. W. Killam et al's Nalls 1, 330 ft from sw and nw lines 50-ac tr, or 330 ft from sw and 5278 ft from nw lines J. E. Roof sur, elev 511 ft, Nacatoch 508, Austin 2210-2788, Woodbine 3244, abnd 3445.

EAST TEXAS BORDER COUNTIES WILDCAT

Harrison County—Distillate Discovery: Bert Fields et al's J. M. Furrh 1, L. Womack sur, 4½ mi s Waskom, Nacatoch 1047, Massive Anhydrite 4550, Pettit 5610, Travis Peak 5950, perf Travis Peak 68 shots 5930-47, 5000 gals acid, flow 66.2 bbls dist, 2,160,000 gas, ¼-in, tp 1710 lbs, td 6305.

SOUTH CENTRAL TEXAS WILDCATS

Caldwell County—Failure: Ogden B. Klein's D. E. Smith 1, 330 fr wl 660 fr sl 50-ac lse, 35-ac tr, L. D. Sowell sur, Chalk 2188, Buda 2500, Del Rio 2560, Edwards 2665, sso, abnd 2674.

Dimmett County — Failure: Humble's Mogford & Kimble 1, 3300 fr nl 1320 fr wl 483.5-ac tr and Trinidad Sanches sur, e Carrizo Park prod, abnd 3002.

Milam County—Failure: Burt & McDowell's Otto Galbreth 1, 330 swly alg el fr nely/cor J. Schrader tr, th 330 e at ra to len in 200-ac tr, J. J. Liendo sur, abnd 879.

Maverick County—Failure: G. P. Shelton et al's Mitchell Heirs 1, 330 fr s&el 160-ac lse, sect 84, sur 54, abnd 2080.

SOUTHWEST TEXAS WILDCATS

Starr County — Failures: H. H. Howell's Francisco P. Margo 1, 330 fr wl 2925 fr sl 500-ac lse, sh 3-B, Joaquin Salinas Porc 70, abnd 6286.

T. E. Stephens' Zaragosa Salinas 2, 1500 fr swl 330 fr sel tr 1 sh-3, 1220-ac lse, La Sacatosa Gr, abnd 1703.

Duval County—Failure: Humble's Dallas Jt. Dtk. Ld. Bank 1, 990 fr nel 650 fr sel SK&K sur 503, 11,746-ac lse, abnd 3200.

LOWER TEXAS COAST WILDCATS

Live Oak County—Failure: John T. Jones et al's Pal Maurin 1, 500 s alg sly/nwc 660.13-ac lse, th 330 e at ra in Stephen Hays Gr, abnd 930.

UPPER TEXAS COAST WILDCATS

Harris County—Failure: J. E. Ludeau's A. W. Augsburger 1, 330 fr sl 330 fr wl 70-ac lse, W. J. Foster sur, abnd 4135.

Wharton County—Failure: Roxoil Drlg. Co.'s Jesse Bartley 1, 330 fr s&el 160-ac lse, se¼ sect 55 ETRR sur, 3 mi e of n extn to Daboval fld, abnd 6605.

UPPER TEXAS COAST OUTPOST

Brazoria County—Angleton Extension: Humble's Minnie W. Mettler et al 1-B, 1980 s of nl 990 e of wl lot 14, 1000-ac lse, s part of Cloud sur, 7250 n ne Mettler 1, pay 10,416, perf 100 shots 10,416-436, flow 1 mln gas, ¼-in, tp 1300 lbs, td 11,597.

UPPER TEXAS COAST NEW PAY TESTS

Harris County—Aldine Gas Discovery: F. M. Corzelius' O. P. Hairgrove 1, 466 fr n&wl 160-ac tr, E. Farias sur, 2000 s sw Browland 1, 5750 ne Phoenix Dairy 1 gassers, pay 7542, perf 47 shots 7528-40, flow 3,683,000, ¼-in, tp 2480, cp 2680 lbs td 7542.

Matagorda County—Midfields Distillate Discovery: Sun's R. B. Trull 1, 660 fr n&wl 160-ac tr, I&GN sur, blk 6, 2087 e ne Strndel 1 disc, pay 9088, perf 36 shots 9088-97, flow 308 bbls 57.8-gr, 3,819,000 gas ⅛-in, tp 3190 lbs, td 9202.

Wharton County—Lane City Oil Discovery: H. W. Snowden's H. C. Cockburn 5-A, 330 se at ra fr c Jarvis Crk, 537-ac lse, S. Castleman sur, lot 5m blk 105, Marginulina pay 5345, perf 5345-53, 5363-85, flow 81.36 bbls 26.3-gr, ⅛-in, tp 340, cp 1280 lbs, td 5503.

Fig. 102 (Front)—Acme Wire Line Clamp—12" liners. Only 10 parts—160 lbs. 200-ton breaking load. 6 to 1 safety factor. Perfectly balanced, for 1 man hitch-on, SAFELY. Patented non-fouling SAFETY link. Recommended for 3000' wells.

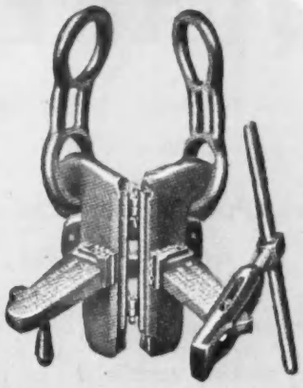

FIG. 102

Drillers knowing Tools Best — Choose Acme First for Toughest Test

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It's that *priceless* element which must come from men's longer experienced minds, more skilled hands and pride-taking, conscientious inner-selves that makes the difference . . .

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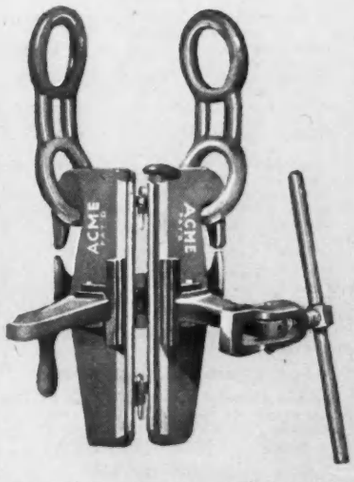

Fig. 103 (Front) — Acme 18" Safety Wire Line Drilling Clamp. For wells deeper than 3000'. Same exclusive features as 12" clamp — for safe "super-service" — but with 50% more gripping surface. Weighs only 173 lbs. but a GIANT in action.

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WILDCAT STARTS

ARKANSAS

Drew County: A. L. Cochran's J. A. Cooper 1, ne ne 7-11s-4w, lcn.

CALIFORNIA

Kern County: Independent Exploration's Deepwell 1, 4-26s-27e, Dyer Creek area, lcn.
Superior's L. & B. 64-20, 20-29s-21e, Cymric area, ru.
Tehama County: North Counties Development Co.'s 1, 29-27n-5w, Blossom area, lcn.
San Luis Obispo County: Henry E. Dawson, Dumplin 2, 18-25s-16e, Cholame area, lcn.
Los Angeles County: Gibson Drilling & Associates' North Montebello 1, 35-1s-12w, Montebello area, pour fdn.
C. G. Willis' Simons 1, 15-2s-12w, East Los Angeles area, lcn.
Superior's & British - American Oil Prod. Co.'s Black 2, 13-4n-18w, Del Valle area, ru.
Ventura County: F. E. Fairfield's Converse 1, 23-3n-21w, South Mountain area, ru.
Santa Barbara County: Whittier Associates' Barham 3, 11-7n-32w, Los Almos area, rig.

FLORIDA

Dade County: Gulf's State-Model Land Co.'s 1, 23,988 n, 1660 w of US Coast & Geodetic Triangulation Station, 60s-35e, lcn.

ILLINOIS

Coles County: Vincent J. Nolan's Coombs Est 6, ne ne sw 23-14n-7e, lcn.
Cumberland County: Dave Black's Rammert 1, se sw ne 33-11n-7e, lcn.
Edwards County: J. W. Havens' Glover 1, se ne se 5-3s-10e, lcn.
Fayette County: J. R. Benson's Durre 1, sw se ne 1-5n-4e, lcn.
Gallatin County: Herndon Drlg. Co. et al's Crunk 1, n2, nw se 1-8s-9e, lcn.
Richland County: Ralph Halbert's Myrvin 1, w2, nw sw 4-2n-10e, lcn.
Nat'l Assoc. Pet. Co.'s Jorgison 1, se se nw 19-4n-9e, lcn.
Shelby County: M. H. Richardson's Doll 1, sw ne nw 4-10n-6e, lcn.
Wayne County: Deep Rock's Spicer 1, sw sw ne 25-1n-5e, lcn.

INDIANA

Gibson County: Illinois-Midcontinent's Parkinson 1, sw ne nw 24-1s-12w, lcn.
Spencer County: Indiana Farm Bureau Oil's Frank 1, nw sw sw 10-6s-6w, lcn.

KANSAS

Decatur County: Helmerich & Payne's Bailey 1, ne ne ne 14-3s-27w, drlg.
Ellis County: Aylward et al's Denning 1, se se nw 36-12s-17w, drlg.
Ellsworth County: Gough Davis et al's Hoch 1, se sw nw 19-15s-10w, drlg.
C. E. Ash's Linke "A" 1, se se nw 29-17s-8w, rur.
Russell County: Sharon Drlg's Krug 1, ne ne sw 30-12s-14w, drlg.
Sheridan County: H. & T. Drlg's Harold 1, sw sw sw 11-6s-28w, drlg.
Stafford County: Plains Exploration's Waples 1, se sw sw 13-23s-12w, pits.
Cities Service's Kipp 1, ne ne ne 23-25s-14w, rur.

KENTUCKY

Butler County: Benedum & Trees' Pircy 1, nw sw nw 18-H-36, lcn.
Daviess County: Watkins Drlg. Co.'s Massey 1, sw sw se 25-P-29, lcn.
Henderson County: Harry Ames' Royster 1, se sw sw 2-O-23, lcn.

NORTH LOUISIANA

Caddo Parsih: A. Paul Gilbert's Thompson 1, 15-22n-16w, 6000-ft Paluxy test.
Lasalle Parish: Joe F. Belt Co.'s Urania Lbr. Co. 1, c nw ne 3-6n-2e, lcn.

MICHIGAN

Barry County: Louis Zellman's Briggs 1, sw sw sw 8-3n-10w, lcn.
Bay County: Shell's Boeing 1, ne ne nw 26-18n-3e, lcn.
Clinton County: Carter's Kirkham 1, nw sw ne 32-8n-4w, rig.
Jackson County: C. A. Perry's Grundermann 1, se sw sw 19-3s-3w, drlg.
Mecosta County: Mich. Consolidated's Seaton 1, ne ne se 7-13n-8w, drlg.
Tuscola County: Gordon Oil's Palm Book 1, se se sw 31-14n-11e, drlg.
Van Buren County: E. W. Leeder's Crowell 1, ne nw sw 19-2s-14w, lcn.

MISSISSIPPI

Jasper County: Southern Oil Production's J. E. King 1, se se 30-1n-12e, csg.
Lamar County: Amerada's Anton Vesely 1, sw ne 7-4n-15w, lcn.

MONTANA

Petroleum County: Ike Taylor's Fraser 1, se se ne 15-13n-17e, Lepper anticline, drlg.

NEW MEXICO

Lea County: Amerada's H. S. Record 1, c nw se 26-19s-35e, lcn.

OKLAHOMA

Kiowa County: P. H. Gray et al's McCurdy 1, nw se se 8-6n-17w, lcn.
Okfuskee County: W. M. Dunn's Gormley 1, nw nw se 11-13n-10e, spud.
Pottawatomie County: J. F. Smith et al's Klingensmith 1, sw sw se 23-8n-2e, rur.
Seminole County: Wood Oil Co.'s Chucco 1, se se nw 3-8n-6e, lcn.

WEST TEXAS

Crockett County: Homer W. Snowden et al's Ada Walser 1, ne ne se E.L.&RR Co. 59, blk BB, lcn 2700-ft cable test.
Garza County: Paul G. Schafer et al's Everett 1, sw sw se H&GN Ry 14, blk 2, lcn 3500-ft rotary test.
Ward County: Gaylord H. Chizum et al's University 1, 2313 ft snl and 330 ft wel sec 27, blk 18, 5927-ac block, lcn 5500-ft test.

WEST CENTRAL TEXAS

Callahan County: Southwestern's S.P. Long 1, 150 ft snl and 605 ft wel sec 77, Comal CSL, lcn 1500-ft cable test.
Fisher County: Great Western Producers, Inc.-Honolulu Oil's Kiser 1, 330 ft out SEc subdiv 2, blk 325, G. W. Crowles sur, 2 mi se Sylvester, 3000-ft rotary test, sp and sd.
Jones County: Oscar Donley et al's M. E. Mullins 1, 1336 ft snl and 330 ft wel se¼ sec 43, Orphan Asylum Lands, lcn 2400-ft cable test.
Pardue & Hilgenberg's R. B. Prothero 1, 1560 ft out NEc subdiv 3, E. C. Miller sur No. 2, lcn 2200-ft test.
Stephens County: Palmer Oil Corp.'s J. A. Caudill 1, 2457 ft wel and 330 ft nsl R. S. Owens sur A-132, lcn 500-ft cable test.
Taylor County: Hungerford-Gaston & Ferguson's L. Webb 1, 1550 ft snl and 1850 ft ewl subdiv 12, Wm. Bell sur No. 425, lcn 1500-ft cable test.

NORTH TEXAS

Archer County: Frank Wood et al's L. F. Wilson-McCrory 1-C, 330 ft snl and 1650 ft ewl ATNCL sec 121, lcn 2300-ft rotary test.
Clay County: Wayne McCormick et al's K. Graff 1, 858 ft ewl and 150 ft nsl sec 76, Parker CSL sur, 350-ft cable test, sp.
Cooke County: Texas' R. W. Huchtons 1, 330 ft out NEc of 73½-ac tr, H. O. Kohlman sur A-554, lcn 2700-ft test.
Jack County: Hanlon & Buchanan's J. D. Gillespie 1, 233 ft out NEc J. W. Colston sur A-1368, lcn 1000-ft rotary test.
Hanlon & Buchanan's G. P. Stewart 1-K, 233 ft snl and 1167 ft ewl TE&L Co. sec 2800, lcn 1000-ft rotary test.
Young County: Henry Craig et al's E. Gilbert 1, 600 ft nsl and 1230 ft wel TE&L Co. sec 221, lcn 1000-ft rotary test.

EAST TEXAS

Hunt County: K. L. McHenry et al's Ida Williams-Magnolia 1, on 150½-ac tract, J. E. Clark sur, begin at SWc J. E. Clark sur go nw along sw line of sur 3015 ft thence ne at right angles to lcn, 3 mi se Caddo Mills, lcn for Travis Peak test.
McLennan County: R. D. Burnett and Tom Emmeert's W. C. Hander 1, 330 ft from m/e/w and 330 ft from m/w/n (highway) lines of 157.37-ac tr, or 497 ft ewl and 4750 ft nsl of C. Farnash sur No. 347, 3 mi w Waco, lcn 1500-ft test.
Navarro County: Woodbine Oil Corp.'s W. W. Carter 1, 1104 ft from m/n/w and 550 ft snl of 150-ac tr, Edgard R. Van Horn sur, mi n Powell, lcn 2000-ft test.
Rusk County: L. O. McMillan et al's Fred Hamilton 1, 1040 ft wel and 730 ft nsl of 100-ac tr, or 2950 ft snl and 6700 ft wel of J. I. Sanchez sur, 3 mi n New Salem, Woodbine test, dr 3350 ft.
Smith County: B. F. Carroll et al's M. H. & Leon York 1, 290 ft ewl and 559 ft nsl of 13-ac tr, Thomas Burbridge sur, adjacent to Lindale cemetery, lcn for Paluxy test.

SOUTH CENTRAL TEXAS

Dimmitt County: Humble's Mrs. Kate Bradshaw 1, 330 fr nwl 1650 fr swl lot 7, T&NO sur 15, 3200 sw dry hole, lcn.
Guadalupe County: United North & South Dev. Co.'s Mrs. Cora Mackey 2, 660 fr nel 610 fr sel 175-ac lse, 2325 fr sel 9500 fr swl Jas. Hodges sur 66, 2 mi sw Day fld, 325 se dry hole 1, lcn.

SOUTHWEST TEXAS

Duval County: Frank J. Gravis' H. Becher 1, 1408 e 831 s fr nwc BS&F sur 531, 172.8-ac lse, 4500-ft test.
Webb County: Sun's Isaac Hirsch et al 1-A,

The OIL WEEKLY'S TRADING POST

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FOR SALE

FOR SALE

■ COMPLETE POWER RIG—A REAL BUY! Cash or Terms.
1—126′ Lee C. Moore Jackknife Derrick w/ 11 foot substructure, walks, runarounds, etc.
5500′—4½″ Range II, 16.16-lb., full hole drill pipe
1—Emsco power pump, 7¼x14 with GAK Wax. engine, new
1—6¾x14 Gardner-Denver power pump w/ XHE Hercules motor, overhauled
1—Hopper 3C Drawworks
1—XHE Hercules motor, overhauled
1—Rotary table, Emsco oil bath, R. B. completely reconditioned
1—Emsco coring unit with Lincoln motor
1—B-J 150 ton hook
1—13⅜″ SDA Cameron prevented with 13″ Cameron valve
2—Sets Baash-Ross tongs, complete, late model, all lugs up to 10¾
1—Shale shaker (Made two wells)
1—6″ GS Swivel
1—4″ Kelly, 38′ long, Eue.
1—Martin Decker Weight indicator
1—Set Baash-Ross drive bushings
2—Kohler 5 K.W. light plants
2—7x12 steel tool houses
1—2½″x55′ drilling hose
All tools, accessories to make complete rig ready for service. This rig can be inspected in my yard in Alice, Texas. Phone 619, 620 or 1169-W. **Harry B. McCartney.**

FOR SALE

50— 500 Barrels
10— 1,000 Barrels
20— 5,000 Barrels
4—10,000 Barrels

Heavy A.P.I. New closed bolted type steel tanks now located at Ogden, Utah. Can quote reasonable prices in order to move from present premises at once.

JOS. GREENSPON'S SON PIPE CORP.
National Stock Yards, St. Clair County, Ill.

■ FOR SALE OR LEASE—Late model Gravity Meter and complete automotive and surveying equipment for Gravity Field crew. Address: Box 19, c/o The Oil Weekly, Houston, Texas.

■ FOR SALE: Model RL Cardwell Unit, with lower drum only, in excellent condition. Price $4,250.00. Reply Engineering Service Co. P. O. Box 81, Oklahoma City, Oklahoma.

■ FOR SALE AT ODESSA, TEXAS:
1—Power Pump—4″ x 6″ Oil Well Supply No. 6P with Waukesha XAHU engine. Mounted on skids—excellent condition.
1—Low 500 bbl. bolted steel tank less deck.
1—122′—333,000 cap. Emsco derrick complete with all sills and lumber.
2—High 500-lb. tanks—located in Welch field, Dawson County.
2500 ft.—Very good 4½″ drill pipe.
Cable tool equipment.
RICHMOND DRILLING CO.
Midland, Texas

■ TD-18 Tractor with winch; TD-14 tractor with dozer and winch. Good Condition, cheap. Lee Construction Co., Foot of 75th Street, Houston. Telephone W-4125.

■ Standard Drilling Outfit, complete, A-1, steel rig. New Young 145-hp. engine, new 5000 ft. lines. $8500 or trade for Bucyrus Spudder. L. A. Bolte. Rt. No. 2, Brunswick, Ohio. W. Richfield 2423.

■ FOR SALE: IMMEDIATE DELIVERY. 5000′ complete rotary drilling rig. Has drilled to 5930′. 8 speed Emsco draw-works—unitized, friction clutch, automatic cat-head, powered by 3-100 H.P. V-8 motors, Oil Well power pump 6¾ x 14, powered by 125 H.P. International Power Unit, extra stand-by engine, roller bearing table, crown, traveling block, hook, two swivels, mud hose, Martin-Decker weight indicator, shaker, Kelly, subs, drill collar, etc. Portable electric arc welding unit, complete acetylene welding equipment, engine powered light plant, engine powered centrifugal water pump, etc., approx. 7000′ 3½″ O.D. and 3900′ 4½″ O.D. drill-pipe. 122′ x 24′ steel derrick, etc. This rig is complete and in perfect condition. Also Reo truck 7½ ton capacity, 3 axle 12 wheel trailer, Ford V-8 Pick-up. Excellent condition. For full particulars write Hansco Oil, 5607 South Figueroa Street, Los Angeles, California.

FOR SALE

■ DRILLING EQUIPMENT—2 Sullivans for diamond, core and test hole drills.
1—Star No. 28 spudder & beam machine
1—Star No. 25 spudder & beam machine
1—Leidecker No. 32 all steel, beam machine
1—Armstrong No. 50 spudder
1—Wichita No. 61 heavy duty spudder
Standard outfit, complete with 80′ steel derrick. Good used equipment. Complete stock of cable tools, prices right. S. W. PRESSEY, Pueblo, Colo.

LIGHT PLANTS

We have a few 1500 watts 32 volts marine type Kohler automatic light plants. These are new plants and have an extra set of complete working parts. Approximately 50% off list price. LAWSON AND ARMER, INC. P.O. Box 9304, Telephone P-8891. Houston, Texas.

FOR SALE

2—100 KW KVA General Electric Generators with Exciter and panel switch boards.

SERVICE SUPPLY COMPANY
Greggton, Texas

■ FOR SALE: 240-acre lease with production. Wells operated by electricity. Chalk rock. Several more locations can be drilled. For price address: W. J. A., 516 Egan St., Shreveport, La.

FOR SALE
ON OUR YARD
IN HOUSTON

6000 ft. Grade D National drill pipe, 4½ in., with Hughes streamline tool joints.

EXCELLENT CONDITION
NO DEALERS

Hancock Drilling Co.
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HELP WANTED

SALES MANAGER WANTED

Young and aggressive sales manager by established oil tool manufacturer. Location Tulsa. Wonderful opportunity for right man. Give complete details in letter. Address: Box 20, c/o The Oil Weekly, Houston, Texas.

1500 fr wly/wl 1000 fr wly/nl J. Poitevent sur 247, 3650 e ne Sun's Hirsch 2 gas disc, 2638-ac "A" lse, 7100-ft test.

UPPER TEXAS COAST

Chambers County: Jack W. Frazier's Wilborn Est. 1, 660 fr n&nel 1617-ac tr, T&NO sur, sect 1, ne S. Mayes fld, 9000-ft test.

Gulf's S. Steenerson et al 2, 320-ac lse, T&NO sur 79, 3100 n of Bernhardt et al 1 gas well, 4000 sw Steenerson 1 dry hole, outpost Fig Ridge fld, 9200-ft test.

Montgomery County: John Mayo et al's C. L. Rawson 1, 5280 fr nwl 660 fr nel W. Starrock sur, Wilcox test.

LOWER TEXAS COAST

Bee County: Humble's B. W. Adams 1-B, 341.9-ac lse, T. H. Marsden sur, Theis fld 10,000-ft deep test.

Karnes County: Edwin B. Cox-Jake L. Hamon's Lora Johnson 1, 330 fr nwl 997 nwl 90.08-ac lse, Victor Blanco Gr, 4500-ft test.

Willacy County: Magnolia's F. Armendaiz 2, 5280 fr nl 6520 fr el 8248-ac lse and share 4, San Juan de Carricitos Gr, 6½ mi se Willamar fld, 12,000-ft test.

Texas Co.'s Yturria Ld. & Livestock Co. 6, 5725 fr el, 4620 fr nl 18,437-ac lse San Juan de Carricitos Gr, 14,000-ft test.

SITUATION WANTED

■ Veteran, graduate Petroleum Engineer, 32, seven years experience as driller and petroleum engineer. Desires position with headquarters in Houston. Address: Box 13, c/o The Oil Weekly, Houston, Texas.

■ Now available a Chief Engineer and Consultant with a wealth of background and experience in Research, Design and Development of drilling equipment and tools including Mud Pumps and wearing parts, Crown and Traveling Blocks, Rotaries, Swivels, etc. You have seen this engineer's accomplishments on the job at the rig. Replies held strictly confidential. Address: Box 21, c/o The Oil Weekly, Houston, Texas.

SERVICES

■ For Rent: 10,000 ft. of 3½″ OD, internal flush, twin pin, used excellent, for rental. Petroleum Pipe and Supply Company, C 4-5045, Houston, Texas.

NOTICES

OIL PRODUCTION

wanted. Property that will make from $20,000.00 to $200,000.00 PER MONTH.

W. K. MANN OSAGE HOTEL,
Arkansas City, Kansas

■ WANTED: Operators to finance and further develop proven and semi-proven oil and gas properties in Montana.
Hamilton & Hamilton, Inc.
Box 1605, 535 Ford Bldg.
Great Falls, Montana.

Perpetually participate in coming Florida oil development by owning income producing fee mineral rights. Geologically selected, on geophysical prospects, leased to major companies, at predevelopment prices. Write **Petroleum Geologist, Box 1701, Houston, Texas.**

NOTICE

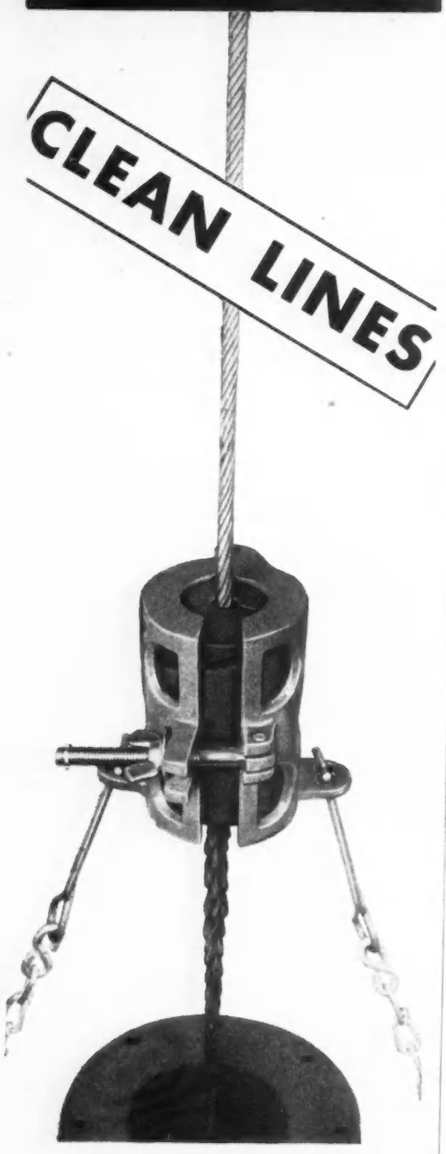
Mr. David A. Bennett announces that Mr. Roy M. Frisby is no longer employed by him. All matters pertaining to the oil operations of David A. Bennett and J. W. Sorrells, formerly handled by Mr. Frisby, should be referred to

BENNETT & SORRELLS
Oil Producers
232 East Ohio Street
CHICAGO 11, ILLINOIS

LEASES, DRILLING, ACREAGE, ETC.

■ ASSOCIATE WANTED on 2000 acres, West Texas; Seismograph High; well recently drilled on edge produced some oil at 3000′. J. Bell, 1907 Hope St., Dallas, Texas.

"Best Bet Yet"



A clean wire line helps your crew. They can work safer and better on a clean floor, free from drippings. With a Patterson-Ballagh Wire Line Wiper the line is stripped completely of mud and oil. A compact steel housing contains a spiral rubber which is inexpensive and easily replaced. The rubber wipes the line as it comes out of the hole. Spark-proof. Use one on every well. Now made of PBX, Patterson-Ballagh's new synthetic rubber.

See Composite Catalog

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Los Angeles 1 Houston 10 New York 6

SQUEAKS from the BULL WHEEL

This Curious World

The reason some girls stay home so much is that they're afraid the wolf will knock at the door and they won't be in.

Once there was a little bee, and it was so very happy because it got a bumble from heaven.

Maybe you've heard about the soldier overseas who wrote his wife: "Having a good wish—time you were here."

The reason that poor men tip more generously than rich men is that poor men don't want anyone to find out they are poor and rich men don't want anyone to find out they are rich.

Said Grandma, looking at granddaughter's new bathing suit: "If I could've dressed like that when I was a girl, you'd be six years older today!"

He May Need a Pal

"Well, Pat," said the friend at the bedside of the dying Irishman, "have you made your peace with God and denounced the devil?"

"Shure, and I've made my peace with God, but I'm in no position to antagonize anybody!"

Not Committing Himself

"You say this man was drunk, Officer?"

"I do not, Your Honor. I merely say he sat in his car three hours in front of an excavation waiting for the light to turn green."

Hell's Horrors

Satan: "What are you laughing at?"

First assistant: "I just locked a woman in a room with 1000 hats and no mirrors."

Aiming to Please

"I'll have some raw oysters, not too large or too small, not too salty or too fat. They must be ice cold and I want them right away."

"Yes, sir. With or without pearls?"

Two Without Luck

"I played a big fish for almost two hours," sighed the girl camper, "and he finally got away."

"My luck was almost as bad," groaned the girl who had just returned from a date. "I played a big fish for four hours and all I got was a fin."

The Bare Facts

"Why is the leading lady mad at you?"

"Oh, she was making a quick change backstage in the dark and when she called for her 'tights,' I thought she said 'lights.'"

Beauty Is Fleeting

"Your wife is ugly. Why don't you make her go to a beauty parlor and get a mud pack?"

"I did. I sent her to a beauty parlor last year for a mud pack, and for three days she was beautiful."

"Then what happened?"

"The mud came off."

Serves Her Right

"What does your husband give you for spending money,"

"Well, last week he gave me a punch in the nose."

Neat Trick

"Does this train go to 42nd Street?"

"Yes, Ma'am. Watch me and get off one stop before I do."

It Takes Some Doing

"I hear you've been to a school for stuttering. Did it help you?"

"Peter Piper picked a peck of pickled peppers."

"Wonderful!"

"Yep, but it's d-d-darned hard to w-w-w-work into an ordinary c-c-c-c-c-conversation."

Helpful Hint

"Waiter, these beans seem very stringy."

"Maybe it would help, Madam, if you ate them with your veil up."

Poet's Nook

When her morale was somewhat flat
She bought a silly little hat
That pepped her spirits up until
Her husband squinted at the bill!

Knows His Oats Now

"I hear you are speculating in rye."

"I was, but the market went against my grain."

Cat's Claw

Two women who had quarreled for years were at last persuaded to make up and be friends.

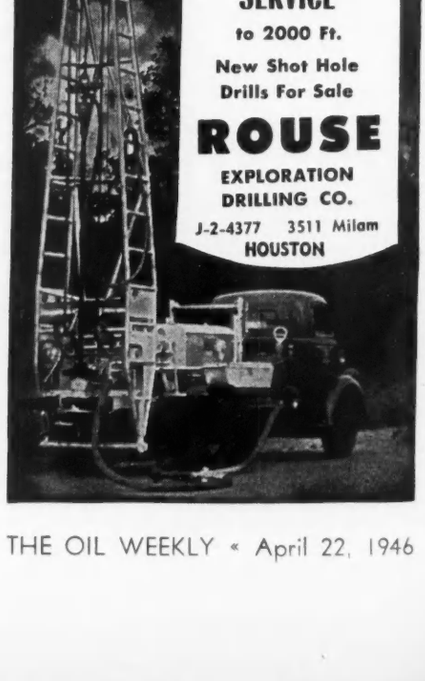
"Well, Mrs. Jones," said one, "I wish you all that you wish me."

"Now you're being nasty again!"

Bad Pun Department

"Do you believe in Buddha?"

"Yep, but oleo is just as good."



WILLIAM W. CLAWSON, assistant chief geologist for the Magnolia Petroleum Company, Dallas, and an employe since October, 1933, has been promoted to chief geologist. He succeeds **S. A. THOMPSON,** who was elected a vice president and placed in charge of explorations in March. Clawson is a native of Salisbury Center, N. Y., and gained his Bachelor of Science degree in mining and engineering from the University of Kansas. He was engaged in subsurface work in the Mid-Continent prior to spending 1926 with the Lago Petroleum Corporation at Maracaibo. This foreign assignment was followed by duty with the I.T.I.O. Company at Bartlesville, Okla.

* * *

W. C. LANE has been appointed assistant manager of Standard Oil Company of California's foreign trade department. Lane served as president of the California Commercial Company, a Standard subsidiary, from 1941 to 1943, and since his discharge from the Navy in December. He started with Standard in Seattle in 1926. During the war Lane rose to the rank of lieutenant-commander, and at the time of his discharge was stationed in London as officer-in-charge, Fuel and Tanker Control Section, U. S. Naval Forces in Europe, and as deputy chief petroleum officer of the Area Petroleum Service. Before going to Europe he was on the staff of the Army-Navy Petroleum Board in Washington.

* * *

JOHN T. JONES, former Ohio landman for Magnolia Petroleum Company and recently discharged as an infantry master sergeant in the ETO theater, has been placed in charge of the company's West Texas district land office at Midland. He relieved **STEVE P. HANNIFIN,** who returns to Roswell after handling the company's West Texas and New Mexico activities as a war-time measure.

* * *

HORTON T. PRUETT, formerly chief engineer with The Chicago Corporation, is now engaged in consulting petroleum engineering work in Corpus Christi, Texas. He will be associated with **JOHN W. CRUTCHFIELD** in a firm to be known as Crutchfield and Pruett with offices in the Nixon Building.

* * *

EDWARD A. BACON, released from the Army in November, 1945, with the rank of colonel, has returned to his former position as crude oil manager, Tulsa division, Shell Oil Company. Bacon, who was in the Army 3½ years, has spent the past three months in the New York offices of the company in the transportation and supplies department. **W. B. CASE,** who has been acting manager while Bacon was away, will be transferred to the transportation and supplies department in New York.

* * *

A. S. RITCHIE, coowner of the D. R. M. Company, oil producing firm of Wichita, Kansas, discussed the "Anglo-American Oil Agreement" before the Petroleum Accountants' Society of Kansas. The program marked the tenth anniversary of the society.

* * *

TOM WRIGHT, district geologist in Kansas for Stanolind Oil & Gas Company, will discuss the "Geology of Western Kansas" before the Kansas Society of Petroleum Engineers during its April meeting at Ellinwood, Kansas, April 25.

* * *

D. W. REEVES, formerly industrial sales manager of Oklahoma Natural Gas Company, has been promoted to general sales manager, succeeding **J. H. WARDEN,** who has resigned to accept the presidency of the West Gas Improvement Company, New York. Reeves, who has headed the industrial sales department of the company since 1938, was given a military leave of absence in 1942 and became a major in the Corps of Engineers. During duty in the office of the chief engineer, 8th Service Command Area, Dallas, he handled utility contracts for the War Department and renegotiation of utility contracts for all war agencies in the service command area. He was released from the army as a lieutenant colonel and rejoined Oklahoma Natural Gas February 1.

D. W. Reeves

WILLIAM H. STRANG has been named executive secretary of the Petroleum Division, American Institute of Mining and Metallurgical Engineers, with offices in Dallas. The post, which was made vacant last year by the resignation of **CHESTER NARAMORE,** was previously administered from the New York City headquarters of the institute. Strang recently returned to inactive duty after four years with the Army Ordnance Department. A native of Denver, he was educated in petroleum production engineering at Colorado School of Mines and the University of Oklahoma. Before the war he held an engineering position with Continental Oil Company at Ponca City, Okla., and was Gulf Coast District editor of THE OIL WEEKLY.

William H. Strang

* * *

GLENN GILLESPIE, drilling contractor, has moved his office and yard from Holdenville to Cushing, both in Oklahoma.

* * *

ROBERT B. CURRAN, manager of The Carter Oil Company's Northwest Division, was named a director of the company April 12. At 37, Curran is one of the youngest Carter employes in a major executive post. Following his graduation from the University of Oklahoma in 1933, Curran joined Carter's geological department at Seminole and became production geologist there. He was transferred to the scouting division in 1935, became chief scout in 1938, and was made head of the scouting and statistical division three years later. In 1943 he was chosen assistant to the president. The next year he was transferred to Billings, Mont., as assistant division manager, and in 1945 he was made division manager.

* * *

DR. C. W. TOMLINSON, Ardmore, Okla., spoke on the "Interrelation of Arbuckle and Washita Facies," and **A. M. MEYER** of Shawnee, Okla., talked on "Washita Sediments Found in Core Holes and Wells Drilled in Bryan County, Oklahoma," before the Shawnee Geological Society April 11.

* * *

W. S. COLE, analytical and consulting chemist, and **T. H. WILLIAMS** have established the firm of Technical Service and Laboratory at San Angelo, Texas, to specialize in oil well core analysis.

R. A. KOENIG has been named division geologist of The Ohio Oil Company in Tulsa, succeeding **FRANK R. CLARK** who has retired as vice president and division geologist after 23 years with the company. Koenig has been assistant division geologist.

* * *

H. P. WICKERSHAM, Union Oil Company engineer, has returned to his Los Angeles headquarters from a trip to Texas, during which he inspected the company's new drilling barge now under construction.

* * *

URBAN M. WARREN has been made drilling foreman for Shell Oil Company in the Los Angeles Basin, with headquarters at Long Beach.

* * *

CLYDE STEVENS, Santa Maria, Calif., oil man, was in charge of the barbecue April 17 of the Santa Maria Oil and Gas Association. **W. O. BUTLER** and **LYMAN SCHEEL** of Union Oil Company were in charge of the entertainment. **KENNETH EVANS** is president of the association.

* * *

E. A. McCULLOUGH has been named manager of Sunray Oil Corporation's new land and geological office at Midland, Texas. McCullough holds a master's degree in geology from Texas Technological College, Lubbock, Texas. He was with the Texas Company from 1934 to 1941, and five years of that time were spent in seismic work in Colombia. In 1942 he joined Phillips Petroleum Company as subsurface geologist at Midland, from which position he came to Sunray.

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A. F. JOHNSTON, CECIL E. JOHNSTON and **DEWEY PALMITIER,** all of Pampa, Texas, have organized the Johnston Oil & Gas Company.

* * *

R. B. LLOYD, W. A. HUTCHISON and **E. THOMAS,** all of Houston, have been given a Texas charter to operate the Rio Grande Valley Gas Company, with headquarters at Houston.

* * *

A. M. JOHNSON, Shell Oil Company, was elected vice chairman for the Los Angeles Basin at the annual election of the API, Pacific Coast District. **A. B. NEWBY,** Southern California Gas Company, was elected vice chairman for the San Joaquin Valley; and **R. J. KETTENBURG,** Shell Oil Company, was elected vice chairman for the Coastal district. **W. G. COREY** was reelected secretary-treasurer of the Pacific Coast District.

* * *

E. C. BROWN of Brown Drilling Company, Long Beach, Calif., has returned from Saudi Arabia.

DAVE SANDLIN J. D. SANDLIN

SANDLIN BROS.

Drilling Contractors

HEAVY POWER RIGS

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MEN IN THE INDUSTRY NEWS

HARRY LEYENDECKER, for 18 years a scout with Tide Water Associated Oil Company, has resigned to accept an executive position in the oil and gas department of the City National Bank, Houston. A native of Temple, Texas, he first became a scout in 1926 for Marland Oil Company in Fort Worth, and later joined Tidal Oil Company, which became Tide Water Associated Oil Company. He moved to Houston in 1932. He was chief scout and management assistant when he obtained a leave of absence in 1942 to serve with PAW. He became director of supply and transportation for District 3 before returning to Tide Water as chief scout and statistician. Succeeding him will be **W. PAUL EDMAN** as chief scout for Tide Water. A native of Iowa, Edman worked in the oil fields with **GEORGE H. ECHOLS,** Houston independent oil man, and joined Tide Water in 1942 as a scout. He has been in the land department since 1945.

Harry Leyendecker

* * *

JOHNNIE McBRIDE, Standard Oil Company of New Jersey, was named chairman at the organization meeting in Shreveport of the Caddo Parish division, Louisiana Petroleum Institute Committee. **WILL GRAY,** Magnolia Petroleum Company, was named vice chairman; and **RAY WYNN,** Arkansas Fuel Oil Company, secretary. **K. DYSON,** Arkansas Fuel Oil Company, and **J. R. MAJORS,** executive secretary of the state organization, were speakers. .

* * *

BRAD MILLS, for five years executive secretary of the American Association of Oil Well Drilling Contractors, on April 9 was named executive vice president. At the same time, **J. DOYLE SETTLE,** who has been with the association for two years, was elected secretary. Headquarters are in Dallas.

* * *

E. M. GEORGE, landman for Shell Oil Company, Inc., was recently transferred from Saginaw, Mich., to San Antonio, which office is under the supervision of **H. F. SARTWELLE,** district land agent.

* * *

HUGH R. LAMBERTH, formerly with Fluor Corporation, Los Angeles, and employed the last two years in Mexico on special engineering work, is entering the employ of Joseph A. Coy Company, Inc., Tulsa, as a special sales engineer.

NORMAN F. ROHRKASTE, associated with Lee C. Moore & Company, Inc., since 1920, has been appointed vice president of the company. He will assume his new duties in addition to those of secretary-treasurer, and will continue in the Pittsburgh office. **HOMER J. WOOLSLAYER,** chief engineer for the company since 1941, was appointed vice president charged with the general management of all the company's oil country activities. He has been with Lee C. Moore & Company since 1923, and will have his offices in Tulsa. **NEWTON CHAPIN, JR.** has been named manager of the industrial division of the company in Pittsburgh. **A. B. DUNHAM** was recently appointed sales representative for the company at Wichita Falls, Texas, replacing **CHARLES GEDDES,** resigned.

Norman F. Rohrkaste

* * *

JACK S. SMITH, manager of the Cementing Department of International Cementers, Inc., is on an extended tour of various oil producing areas of South America. Plans include stays in Maracaibo, Eastern Venezuela; Barranquilla, Cucuta, and Bogata, Colombia; and via the Canal Zone to Mexico, returning early in May.

* * *

L. W. BARTHELD has been appointed district manager for Boviard Supply Company in the company's West Texas territory with headquarters at Odessa. In 1938 he became manager of the Boviard store in Salem, Ill., where he remained until 1942. Since then he has been district manager over the Illinois area. **D. W. CUNNINGHAM,** formerly a special sales representative for Boviard in Oklahoma City, has been appointed manager of Boviard's store in Odessa. **V. P. McANALLY** has returned to Boviard as district manager for Illinois, the position he left in 1942 to enter the Army.

L. W. Bartheld

HENRY W. DODGE, former vice president and general sales manager of The Texas Company, has been elected chairman of the board of Air Products, Inc. He joined WPB in Washington shortly after Pearl Harbor and resigned as deputy director general in February, 1943, to become PAW director for 17 eastern states. Air Products, Inc., was organized before the war to develop an advanced method of producing oxygen on the premises of the ultimate consumer, thus eliminating the cost of distribution. The company perfected this process in time to meet the tremendous demands for oxygen by the Allies for wartime use.

Henry W. Dodge

* * *

DICK VAN ETTA of Patterson-Ballagh Corporation has been transferred from the Houston territory to the West Texas territory with headquarters in Odessa.

* * *

LUTHER L. CLARK, long-time scout for The Carter Oil Company covering Oklahoma City territory, has been assigned to Carter's land department and has moved to the northwest division, Rawlins, Wyo.

* * *

W. C. STEVENSON has been appointed assistant to the executive vice president in charge of industrial relations for Union Oil Company of California, succeeding **H. B. DEAN,** retired.

* * *

HAROLD HOLDEN, former Army Air Corps flier, has been named pilot for George E. Failing Supply Company, manufacturers of portable oil field drilling and exploration equipment. A five-place plane, christened the "Core Driller," has been delivered to the firm. Another is on order and the company expects to purchase a smaller plane for short trips.

* * *

RALPH FILLMORE, JR., and **R. R. SHEETS,** who operated a brokerage partnership in Oklahoma City, have disposed of most of their holdings and Fillmore is movnig his office to the Apco Tower in Oklahoma City to operate as a consulting geologist. Sheets will continue brokering.

* * *

H. B. (DOC) KNISELEY, of Tulsa, editor of The Carter Oil Company publication, *Link,* is the new president of the Southwestern Association of Industrial Editors, Kniseley was director of publications at the Spartan School of Aeronautics before joining Carter in 1943.

* * *

A. J. McGURN, assistant manager of purchases for Union Oil Company, has retired after 30 years of service. His duties will be assumed by **C. S. PERKINS. H. R. MORRISON** of Union Oil's purchasing department has been transferred to San Francisco as district purchasing agent.

* * *

RICHARD G. PROUGH has returned to Union Producing Company, Houston, after service in the Navy and has been appointed district geologist in the Houston district. Prough, graduate of the Missouri School of Mines, was geological scout for Union before he entered the service.

* * *

NEIL H. McDONALD, geologist with Hunt Oil Company in West Texas, has resigned to become a florist at Midland.

* * *

EARL REESE of Patterson-Ballaugh Corporation is leaving soon on a three or four months' trip through South America.

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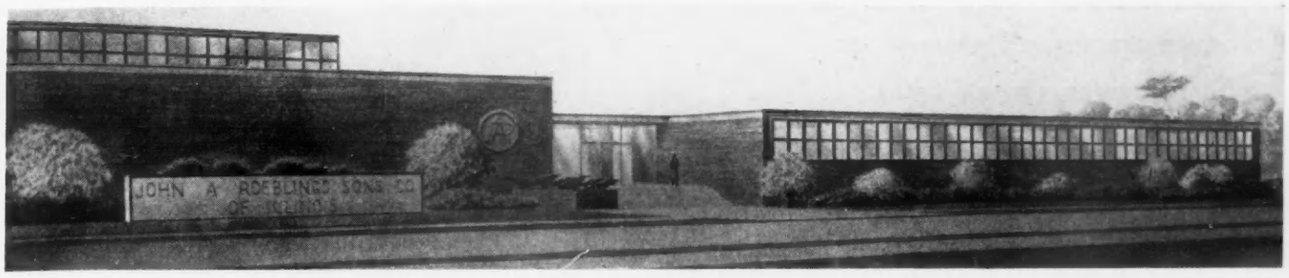
Deaths

FRANK B. HENGST, 48, Tulsa, president of the Mid-Continent Torpedo Company, and pioneer oil well fire fighter, died April 12. Hengst, born in Oregon, started to work in the Oklahoma oil fields at an early age and for a number of years was associated with **M. M. KINLEY.**

* * *

MICHAEL L. BARTLETT, 65, an official of the Royal Oil and Gas Company, Tulsa, died of a heart attack April 12 in his Tulsa home. Born in Pennsylvania, he went to Tulsa over 32 years ago.

John Roebling Erecting Chicago Office Building and Warehouse



John A. Roebling's Sons Company of Illinois is erecting a modern office building and warehouse. The new building has been designed with provision for future expansion, and is located at 5525 West Roosevelt Road, Chicago.

The structure is designed and located to facilitate material handling and expedite customer service. The site selected will provide exceptional transportation advantages, because of the proximity of inbound and outbound freight for all railroads entering and leaving the Chicago area.

A. J. Smith Purchases Most of Black, Sivalls, Bryson Stock

Practically all the capital stock of Black, Sivalls & Bryson, Inc., oil industry equipment manufacturers, has been purchased by A. J. Smith Corporation, Kansas City, Mo. The deal is reported to have involved values of about $7 million.

A. J. Smith

The A. J. Smith Corporation (a Delaware corporation) was recently organized by A. J. Smith, Kansas City, and his associates in the Smith Engineering Company. Smith, who is president and general manager of the corporation, will head Black, Sivalls & Bryson, Inc., as president and general manager.

Black, Sivalls & Bryson is a long-established manufacturer of bolted steel storage tanks for the oil industry, welded steel tanks, wooden tanks, pressure vessels, pressure relief valves and related products for the oil producer. The company maintains warehouses and offices all over the United States and Canada where oil production and refining is in process, and exports its products to all parts of the world. The two largest manufacturing plants for the company are at Kansas City, Mo., and Oklahoma City.

The Black company was founded when A. H. Black started erecting wooden tanks in 1893. In 1900 he formed a partnership with James Sivalls, which grew to embrace Black's brother, Edward F. Black, and W. G. Bryson.

A. H. Black is the only surviving member of the four partners and will remain with the company as chairman of the board of directors and adviser to Smith. There will be no other change in the other principal officers or in the personnel of the company.

Velocity Service Offered

A velocity service for the geophysical industry has been announced by Key Velocities, Inc., with headquarters in Tulsa. This organization offers several types of service whereby a greater amount of accurate velocity control will become available to the contracting companies and the oil companies operating their own seismograph crews.

FWD Truck Delivered 5600 Miles Overland to Fairbanks, Alaska

Overland delivery of an FWD truck over the Alcan highway to the Sourdough Express Company of Fairbanks, Alaska, a distance of 5600 miles from the factory where it was manufactured, is reported by Glenn Carrington & Company, of Seattle, Wash., distributors of industrial and mining machinery in Alaska.

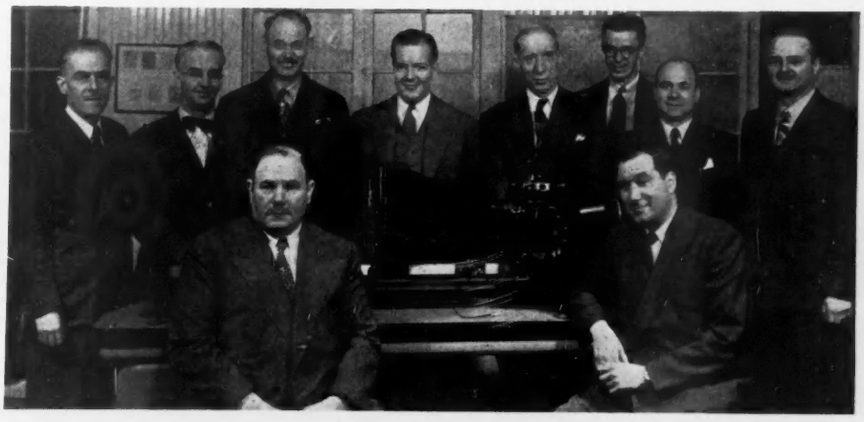
The FWD, a three-ton model, was delivered to Eugene Rogge, manager of the Sourdough Express, at the factory of The Four Wheel Drive Auto Company, in Clintonville, and was driven by him to Seattle, where it was equipped with a platform-type body. Rogge then loaded up with six tons of machinery, and with Arthur Erickson, of Glenn Carrington & Company, acting as relief driver, started the trip to Fairbanks. The 2995-mile trip was completed in five days and 18 hours, with 21 hours lost on stops.

Rogge and Erickson entered the Alcan highway at Dawson Creek, B. C., and left the famous military road at the cut-off to Haines, crossing the border into Alaska beyond Northway.

Supply Officials Elect

Directors and officers of the Louisiana Supply Company were re-elected at the annual stockholders' meeting. Two additions were made to the sales organization: H. W. Ladd, Jr., attached to the Sulphur office and Tommy Thomas with the Brookhaven, Miss., branch.

Nordstrom, Edwards Research Staffs Pooled



To speed up development programs and to undertake research projects of a scope too wide for the ordinary individual industrial laboratory, the engineering and research staffs of Nordstrom Valve Company and Edwards Valves, Inc., both affiliated with the Rockwell Manufacturing Company of Pittsburgh, have been pooled. In a recent meeting at the Edwards' plant, executives of the sales, engineering and research staffs worked out a long-term program. Pictured, back row, left to right, are: E. E. Matheson, sales manager, Nordstrom Valve Company; A. J. Kerr, vice president of sales, Rockwell Manufacturing Company; E. E. Hedene, chief engineer, Oakland Plant, Nordstrom Valve Company; W. F. Rockwell, Jr., vice president and general manager, Rockwell Manufacturing Company; C. B. Johnson, chief engineer, Pittsburgh Plant, Nordstrom Valve Company; W. A. Marsteller, vice president, Edward Valves, Inc.; David MacGregor, chief engineer, Edward Valves, Inc.; W. F. Crawford, president, Edward Valves, Inc. Front row, left to right: G. F. Scherer, director of Research, Nordstrom Valve Company; L. H. Carr, director of research, Edward Valves, Inc.

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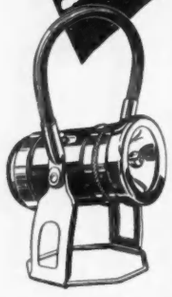

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Mississippi Hearing Set

The Oil and Gas Board of Mississippi will hold a public meeting at Jackson April 24 to discuss conservation of oil and gas. The Board will consider (1) the advisability of adopting general rules and regulations relating to oil and gas and repealing all rules and regulations in conflict with revised rules and regulations, (2) the appointment of a committee to be composed of landowners, royalty owners and producers of oil, gas and condensate in the state to prepare a proposed set of general rules and regulations relating to oil and gas, and (3) setting a date for the hearing of these proposals.

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